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An epic of water and power : a history of the Modesto Irrigation District

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AN EPIC OF WATER AND POWER

A HISTORY OF THE MODESTO IRRIGATION DISTRICT

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DEDICATION

This thesis is dedicated to those irrigation pioneers who, through their persistent efforts in the cause of irrigation, are responsible for the rich and beautiful valley in which we live today.

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Chapter I

THE BACKGROUND OF IRRIGATION

Section 1

GEOGRAPHIC FACTORS

Any person who visits the Central Valley of California in mid summer or late summer will find green grass, ripening fruit, blossoming flowers. His grandparents visiting the same area before 1904 would have found blistering fields of drying or dried grain or weeds inhabited mainly by horny toads or other denizens of a semi desert. What made the change? Irrigation. Mark Twain (Samuel Clemens) is said to have remarked that everyone talks about the weather but no one does anything about it. Mark Twain visited the great Central Valley of California, but that was before the modern irrigationists had trasformed this near-desert to a productive Garden of Eden.

The Modesto Irrigation District is located on the eastern side of this Great Valley about half way from North to South. The Great Valley is really two distinct river valeys further divided by lesser stream valleys. The Sacramento River Valley is about 500 miles long and forms the northern half; and the San Joaquin Valley is about 350 miles long and forms the southern half. For many practical purposes local residents of this great Valley call it the

Sac-Joaquin Valley. There are no hills nor mountains to separate these valleys so we may consider them as one.

Ordinarily from an economic-geographical point of view, we consider a mountain range as a divider of people, and to a large extent that is true. People in a single broad valley usually have more nearly the same ideals, customs, crafts, occupations, etc., than do people on the opposite side of the mountain ranges, although there may be fewer actual miles separating the latter. But for the study of irrigation we have to grant that these mountains have united the people. The majestic Sierra Nevada Mountains have formed the soil and funished the water for the rich agriculture of the Great Valley. Without the Sierra Nevada Mountains this area would be almost a desert. The northern third of the valley would probably have enough rainfall, from 20 to 30 inches, to do some semi-dry farming. The middle third would have about enough rainfall, from 10 to 20 inches, for dry farming, but the southern third of the Great Valley would be a virtual semi-topical desert.

But fortunately for the welfare of millions of people, our good Lord in His bountiful generosity saw fit to build the Sierra Nevada Range to intercept the moisture laden Pacific sea breezes and cause precipitation. The precipitation (rainfall) in Modesto Irrigation District runs

between 10 and 20 inches a year.[1] But that is not enough for intensive cultivation of crops requiring much water. The summers and autumns are long and dry. The "short winter wets the mountains and lowlands alike so the bulk of the flow in California streams occurs at the time of least demand for water."[2] Providence arranged for that eventuality also, by creating that phenomenon called snow. Snow, to California, is certainly more important than rain. Snow can be turned to rain (water) more or less easily by application of heat, but it is much more difficult to turn water back to snow.

Snow not only provides winter sports such as skiing and sledding; but, of much more importance, it provides a storage or savings bank (snowbank) ('snopun) in the High Sierras during the winter. In the late spring and early summer Apollo liquidates these deposits more or less gradually. Snow seems soft and delicate to touch unless it is forced down one's neck or applied with speed in the form of a cannon ball missile. But even a small bank of snow will with stand a day's pounding by the sun and look as fresh as before. Snow is, fortunately for the success of irrigation in California, slow melting. The mountains that catch and

1. State of California, San Joaquin River Basin, bulletin #29, chart p. 76
2. State of California, Water Resources of California, bulletin #12, p. 21

hold this snow are a high range approaching and even exceeding 14,000 feet (e.g., Mt. Whitney, 14,502 feet, the highest mountain in the United States). This Sierra Nevada Range "as a whole may be regarded as a huge block, uplifted on the east long enough ago to be deeply scored by the streams from its crest".[1] This range, as we have previously mentioned,[2] formed the soil of this valley, which apparently is at least 15,000 feet deep-- (An oil well was drilled in the valley to a depth of 15,009 feet through alluvial soil[3]). Little danger exists of this soil being washed away by erosion in the near future!

The Sac-Joaquin Valley is almost ideal as far as irrigation is concerned. It is almost as flat as a table, dropping about 2 or 3 feet per mile toward the middle of the valley from the beginning of the valley proper westward to the Sacramento or San Joaquin River. The summers are long, hot, and cloudless; ideally suited to the ripening of tropic fruits.[4] All the valley lacked was sufficient water. And the mountains now furnish that.

All of the southern half of California is semi-arid and must depend upon irrigation to see normal crops through to maturity and fruition. The Spaniards found it so when

1. Mill, The International Geography, 767
2. Supra, p. 2
3. Modesto Bee, Sept. 30, 1944, p. 2
4. Coman, Economic Beginnings of the Far West, II, 302

they came, and the climate has not changed perceptibly since then.

Section 2

EARLY IRRIGATION IN CALIFORNIA

Irrigation had been practiced in America before the white man arrived by the Indians of the southwest plateau land to help cultivate their simple corn, pumpkin, and squash lands. But the degenerate California Indians were not interested in or capable of developing irrigation projects.

The Spaniards began setting up the Franciscan missions in California in July, 1769 and brought in the simple California native to do the menial work of the mission.[1] More intensive agriculture had to be adopted to feed the increasing Indian proselytes. And in the dry summer, irrigation of some form had to be used.

What would be more natural and normal than to harness the streams around the missions to irrigate these farms? To the Spanish, "irrigation was a race heritage" learned from the Moors, the clever invaders from North Africa.[2] The irrigation systems in Spain "were usually undertaken by the towns for the benefit of their inhabitants, and the

1. Drake, Making of the Great West, 61
2. Coman, Economic Beginnings of the Far West, I, 136

common ownership of the source of supply was the ancient Spanish usage".[1]

Father Junipero Serra, who began the Alta California missions, asked and was given permission to move the Monterey Mission in 1771 because water for irrigation was lacking.[2] By 1777 more extensive irrigation was begun at Mission San Jose at Santa Clara in northern California (almost due west of Modesto). The river was dammed at public expense.[3] This set a precedent in California which culminated in the Wright Act.[4] This, in turn, led to the construction of La Grange Dam.[5]

The Spanish mission fathers started the public development of irrigation. Today almost all irrigation projects are publicly owned in the Great Valley. And probably foremost among these is the Modesto-Turlock joint project. The mission fathers did not establish their missions in the Great Valley. They had more than their hands full along the coast. The few Spaniards who did enter the valley were interested more in ranchos for horses or cattle. Besides the lay Spaniards could not get the Indians to work as willingly as had the mission fathers. Too soon the Missions were broken up for political reasons, and the irrigation works of the mission fathers fell into disrepair and ruin.

1. Coman, Economic Beginnings of the Far West, I, 136
2. Gray, History of California, 66
3. Coman, op. cit., p. 136
4. Infra, p. 21 ff.
5. Infra, p. 43 ff.

Section 3

EARLY IRRIGATION IN THE GREAT VALLEY

Neither the Spaniards nor the Mexicans who succeeded them were interested in farming in the Great Valley. Their long suit was great horse or cattle ranches. This was more or less natural, because the native fauna before the white man were deer, elk, and antelope.[1] Fossil horse, camel and other animals have been found at various depths in the alluvial strata, mostly within 10 to 40 feet of surface.[2]

To the early American explorers, the valley seemed a great near-desert in the summer time.[3] The weeds and wild-flowers that had existed before the Spanish arrived had been at least partly replaced by wild oats, "a climatic deterioration of the tame oats brought here by the Spaniards".[4] The rivers in the Great Valley were close enough together to support immense herds of deer, elk, antelope, some grizzly bears, many coyotes, thousands of wild horses as well as degenerate Indians.

Americans entered the Spanish territory without permission, but without much official protest, and with some unofficial approval. Early American settlers realized the

1. Vasche, Story of Our County, 16
2. Fossil remains are found in sewer excavations, well drilling and other types of excavations. Specimens are now in the Modesto Junior College Museum.
3. Coman, Economic Beginnings of the Far West, II, 208
4. Cronise, The Natural Wealth of California, 355

possibility of productiveness of the vast acres between rivers if only water could be gotten to the land during the summer months. As early as 1835 irrigation was practiced in the Great Valley by Dr. John Marsh (for whom Marsh Creek was named).[1] The Swiss, Captain John A. Sutter, also saw the need for irrigation, and as early as 1839 hired Spanish speaking Indians to dig irrigation ditches for him.[2]

The Americans gained permanent control of California by the Treaty of Guadeloupe Hidalgo in 1848, and earlier in the same year gold was discovered in one of Sutter's ditches. With the coming of the miners, California rapidly increased in population, and as a consequence the need for agricultural products for human consumption was greatly increased. Many smarter, or luckier, or lazier men, such as Samuel Brannan, catered to the needs of the miners rather than dig for the all too elusive gold.[3]

The miners dug ditches to wash the gold, and mining ditches were utilized for agriculture.[4] In these early days each miner would appropriate as much water as he needed, for there seemed a sufficient amount. Irrigationists used the tailings from the miners or used abandoned mining ditches for diversion of water to irrigate the crops.

1. Coman, Economic Beginnings of the Far West, II, 215
2. Ibid., p. 216
3. Scott, Sam Brannan and the Golden Fleece, 187 ff.
4. Coman, op. cit., p. 302

We have noted that the stockmen had used the Great Valley for grazing the cattle.[1] The meat, however, was less valuable than the hides. Hides could be sent to Europe by ship, but the meat could not. Meat had no value.[2] But with the arrival of the gold seekers, meat became as important as hides, and many early American settlers engaged principally in stock raising, as had the Mexicans, but for a different reason.[3]

Dry wheat farming began soon after the arrival of the Americans. They realized that if the land could produce bounteous crops of wild oats, lush natural grasses and weeds, it could produce wheat. And produce wheat it did! But the rain was too uncertain, and years of drought, such as 1852-53, 1861-62, 1867-68, 1871-72, ruined many promising crops.[4] Irrigation was soon seen by many sensible and progressive farmers to be essential for their well-being.

Small private irrigation projects existed at least from Dr. Marsh's time.[5] To the newly arrived farmer with little or no spare capital, irrigation, the resort of the

1. Supra., p. 7
2. Scott, Sam Brannan and the Golden Fleece, 134
3. U. S. Dept. of Agriculture, Soil Survey in Modesto-Turlock Area, 12
4. Coman, Economic Beginnings of the Far West, II, 381
5. Supra., p. 8
6. Coman, op. cit., p. 297

mission fathers, seemed, a costly way of making good nature's deficiencies.[1]

It is true that as early as 1854 California realized the importance of the life-giving waters pouring down from the stately Sierras and in that year issued an Act for the appointment of water commissioners.[2] Nothing much was done, however, until after the drought of 1862-4 had ruined many of the stock ranches. Only then did the interest of the farmers become dominant in the legislature.[3] Under acts of May 14, 1862 and April 2, 1870 most of the water appropriated for irrigation was controlled, but no proper measures were taken by the state to promote this interest prior to 1878.[4]

In the early 70's the era of irrigation by private capital opened.[5] Many companies entered the field of supplying farmers with water. For instance the San Joaquin and Kings River Canal and Irrigation Company inaugurated a system that was to water fifteen thousand acres and proposed an extension that would bring the total area covered to 325,000 acres.[6]

One of the by-products of irrigation was the beginning of the breakup of the tremendous estates and ranchos,

1. Coman, Economic Beginnings of the Far West, II, 297
2. Bancroft, History of California, VII, 11
3. Coman, op. cit., p. 297
4. Bancroft, op. cit., p. 11
5. Coman, op. cit., p. 302
6. Ibid., p. 303

Where the cattle ranches were frequently measured in the tens of square miles, the great wheat ranches did not contain more than 10,000 acres of tillable lands.[1] But this was only the beginning. With more workers in the country, more intensive cultivation was possible. And with more intensive cultivation the size of farm holdings decreased.[2] With the further utilization of labor, intensive cultivation, and irrigation the average farm became smaller. Irrigation tended to still farther reduce farm acreage.[3] Farmers experimented with various sizes of farms, but it soon became evident that a man could do better with fruit or vegetables on 10 or 20 acres than with a larger tract.[4]

We all grant today that irrigation is an absolute necessity in California. Cleland says "water is King in California," and true that is.[5] But there has been an amazing amount of opposition to irrigation. Today we realize that these rich agricultural areas would revert to the desert again if water were removed from the land. But in the 60's, 70's, 80's and 90's many people could see absolutely no reason to invest millions of dollars to water a trackless desert.[6] The majority of large land owners, who by that

1. Coman, Economic Beginnings of the Far West, II, 306, 303
2. Ibid., p. 305
3. Ibid., p. 306
4. Ibid.
5. California: March of Industry, 197
6. Elias, Stories of Stanislaus, 11

very fact would be the heaviest taxpayers, were raising wheat and insisting that central California needed no irrigation and were utterly opposed to subdividing and selling.[1] Even as recently as 1901 a government report said that irrigation was not a necessity.[2] The intelligent readers of this paper know that this has been proven wrong by the developments of later years.

One of the excuses used to oppose irrigation was that the costs of irrigation would be too great for the benefits to be derived.[3] Another argument was that irrigation would ruin the country through introduction of malaria and attendant ills.[4] Without much doubt the big wheat and stock raisers who denied the value or need of irrigation were prejudiced against irrigation.[5] They were prejudiced because it would mean a complete change in agricultural methods.[6]

These arguments against irrigation might have fooled some people. But it did not fool mother nature. The irrigated farms of California had a "growing season double that of the Eastern States, and the size and sweetness of cabbages, squashes, melons, etc, increased in proportion.

1. Adams, E. F., "California District Irrigation Bonds", Sunset, XXVII, 326 (Sept. 1911)
2. U.S. Dept. of Agriculture, Report of Irrigation, 17
3. Ibid., p. 31
4. Ibid., p. 32
5. U.S. Dept. of Agriculture, Bulletin, #100, p. 31
6. Ibid., p. 31

Sugar beets'...yield of sugar was 2400 lbs. to the acre. Fruit trees grew more rapidly and bore earlier than east of the Rockies. The flavor of the apples, peaches, and cherries was inferior, but the pears and apricots and plums were unequalled".[1]

Section 4

IRRIGATION IN THE MODESTO AREA

We shall consider the Modesto area as being the area north of the Tuolumne River to the Stanislaus River and from the San Joaquin River on the west to the foothills of the Sierra Nevada Mountains. By the early settlers this area was called Paradise Valley.[2] A town of Paradise existed for a few years, having been laid out by a Mr. John Mitchell about 1867-68.[3] It gave up and moved a few miles east into the newer town of Modesto soon after the latter was started in 1870.[4] We can easily see now why the valley might be called Paradise, but we may easily believe the namers of the area were not there in the late summer when, before irrigation, "the long summer drought created a vast deal of dust, covering everything with a coating that lasts from May to November...and affects the eyes and air pas-

1. Coman, Economic Beginnings of the Far West, II 303
2. Elias, Stories of Stanislaus, 16
3. Ibid., p. 270
4. Ibid., p. 256

sages".[1] This, we remind you, was before irrigation. Such conditions are not likely in present days.

The Modesto Irrigation District now includes about 81,000 acres in the western part of this Paradise Valley.[2] The land is almost flat, consisting of soils that are, as a whole, "light, the largest part of the area consisting of sandy loams and sands".[3] The soil is ideal for diversified agriculture, and it has now been proven that the soil types of Modesto District are best adapted to the application of irrigation.[4] Some alkali, hard pan, and heavy clay loam types of soil do not do well under irrigation.

The possibilities of irrigation were discussed as early as 1854 when surveyor Silas Wilcox wrote in his official report that:

> The plains in this county could be irrigated by taking the water from the rivers running through it at the foot of the mountains by means of canals. It is not expedient at present for it would be attended with great expense and have but few consumers. [population 1854 c. 1000] We have good reason to believe from the situation of the arable land of this country that artesian wells could be sunk successfully; if so it would be more convenient than any other mode of irrigation.[5]

The early miners in Stanislaus County used the waters mainly for sluicing, but some used the water for irriga-

1. Cronise, The Natural Wealth of California, 385
2. Infra, p. 158
3. U.S. Dept. of Agriculture, Soils Survey, 70
4. Modesto Chamber of Commerce, Modesto, 1926, p. 7-9
5. Elias, Stories of Stanislaus, 12

tion. The first irrigation in Stanislaus County consisted simply of using the natural flow of water, diverting the river water to the land by small ditches or flumes.[1] Pumping of water for irrigation naturally followed, but as the country began to fill up with more settlers, and as the small farmers began to engage in intensive agriculture, it became apparent that this would be entirely insufficient.

The extensive development of irrigation dates from about 1870.[2] Then the farmers began to realize the potential value of water running "to waste and depositing... fertilizing silts in Suisun Bay".[3] What really shocked the farmers into definite action was the big two and a half year drought which ended in December 1871.[4] It was not until then that the people were really willing to discuss openly the need for irrigation.

Water from the Miller Canal, was available to the farmers in Stanislaus County, beginning in 1871.[5] But the system of capitalistic distribution of water was entirely too costly for the average small farmer and most large ones. "Water users held no stock in the works, but paid for water rights to their lands and an additional annual charge for water."[6] The grasp that these capitalists had on the

1. Vasche, Story of Our County, 96
2. State of California, Irrigation Requirements of California Lands, 48
3. Modesto Chamber of Commerce, Modesto, 1926, p. 11
4. Elias, Stories of Stanislaus, 18
5. Treadwell, The Cattle King, 62 ff.
6. Smith, Garden of the Sun, 463

farmers is indicated by the government report of 1901, which said that the "water tolls have been raised, farmers impoverished, and all progress and prosperity banished".[1]

The progressive and sensible farmers realized that public ownership in some form or another would be necessary, but these were the days before Theodore Roosevelt's government conservation plans and long before the New Deal. In those days public ownership of utilities had not proven itself. The farmers were cautious about treading on the toes of tradition, especially in the form of wealthy land owners and riparian right owners.[2]

Water was supplied to some farmers by the Wheaton Dam, which had been constructed in 1852 for "hydraulic mining purposes".[3] In 1872 an act was passed and presented to the State legislature entitled "An Act to Encourage Irrigation". This bill would have allowed Stanislaus County to subsidize the Tuolumne Water Company, of which M. A. Wheaton of San Francisco was practically sole owner, to construct canals, tunnels, flumes, ditches for the flow of water to the thirsty farms between the Stanislaus and the Merced Rivers. The bill did not pass for various reasons. Opposition by large landholders who feared excessive taxation, and by others who feared waste or corruption in the deal prevented

1. U.S. Dept. of Agriculture, Report of Irrigation Investigation of California, 40
2. Infra, p. 50
3. Elias, Stories of Stanislaus, 20

the bill from becoming law. Elias tells us that, "Mr. Wheaton expressed a willingness to cooperate fully with the agriculturists fairly in good faith, and in a spirit of friendly and mutual understanding. He assured the prospective users of the water that water could be furnished for the sum of one dollar and a quarter an acre."[1] It may have been just as well that the bill did not pass the legislature, because that might have prevented the construction later of the far greater La Grange and Don Pedro dams.

For the next five years, during the national depression of 1873, irrigation agitation was "continued with more or less varying success."[2] In 1877 a second major proposal was made. This scheme was to create a joint stock company of the farmers of the area. Mr. Wheaton estimated that the total cost of the project would amount to not over two and a half dollars per acre.[3] He offered to sell his property, (the Wheaton Dam and water rights and other pertinent holdings), for "what it has cost me, which is not a tithe of its actual value".[4] He figured that the farmers would have practically free water after paying the first cost of the project.

The farmers backing irrigation organized, and solicited funds for an intensive campaign to get enough farmer-

1. Stories of Stanislaus, 21
2. Ibid., p. 23
3. Ibid., p. 25
4. Ibid., p. 24

acres willing to cooperate. The meeting was held in Modesto on April 21, 1877 and "may be said to have been the most important ever held on the plains of Stanislaus".[1] The leaders of this meeting were the same ones who later gained passage of the Wright Act.[2]

At this meeting a distinguished engineer, Mr. William Ham Hall, who had been hired to make a preliminary survey, reported that the probable cost would run six to eight dollars an acre.[3] This would be moderate because the only expense beyond this would be upkeep. At the close of the meeting it was ascertained that 13,000 acres had been pledged.[4]

Other meetings were held. A simpler plan was drawn up. The farmers voted themselves a 10 cent per acre assessment to defray expenses of organization. A corporation was inaugurated, to go into effect when 40,000 acres were pledged. This required number of acres was not pledged, and so the attempt to gain irrigation again fell through.

Undaunted, the following year the farmers secured the passage through the State legislature of an act creating the "Modesto Irrigation District".[5] This law authorized

1. Elias, Stories of Stanislaus, 25
2. Infra, p. 21 ff.
3. Elias, op. cit., p. 26
4. Ibid., p. 28
5. Ibid., p. 29

the creation of a land owners corporation which was to receive the money derived from the sale of bonds issued by the county. This law was merely an enabling act and did not force the farmers to support irrigation. It was no more successful than its predecessors, but acted as another stepping stone toward the Wright Act.

In the meantime on the western side of the San Joaquin River in Stanislaus County, the farmers were having their difficulties. For eight years prior to 1877 "there had been two good crops, one fair crop, two that hardly paid the expenses of the harvest, and three total failures".[1] Governor Irwin made a study of the problem at the insistence of the "Westsiders". A "West Side Irrigation District" was created by the legislature in 1876. In May, 1877 the "Westsiders" voted overwhelmingly to tax themselves for the construction of the irrigation facilities (extending 190 miles from Tulare Lake to Antioch). A celebration was held at Grayson a week after the vote. But the celebration was premature. On the same day on which this celebration occurred, and during the festivities, a writ of prohibition was issued by Judge S. B. McKee...based on grounds of unconstitutionality of the law.[2] Because of the unconstitutionality of the law, the writ was made permanent, and the West

1. Elias, Stories of Stanislaus, 31
2. Ibid., p. 38

Side Irrigation District ceased to exist.[1] This law, though unconstitutional, pointed the way to the next step which was successful: The Wright Law.

1. Elias, Stories of Stanislaus, 39

Chapter II

THE CREATION OF THE MODESTO IRRIGATION DISTRICT

Section 1

THE WRIGHT ACT

Most intelligent and far-sighted citizens of Paradise Valley were certain that irrigation, regardless of cost, was essential for the well-being of farmers and town dwellers alike. But each of the attempts to gain public irrigation for the promising valley had met with no immediate practical success. The need was so obvious and the sentiment in favor of irrigation so strong that we are surprised that nothing more was done. Each project failed, partly through apathy on the part of too many farmers, partly through opposition by large landowners growing grain, partly through lack of common aims of the irrigationists themselves, and partly through the lack of legal precedent. It was seen by the intelligent proponents of irrigation that all voluntary organizations would fail because of diversity of ideas regarding irrigation.

It was in view of these circumstances that the Modesto (and Turlock) districts realized that their only hope of gaining real "success lay in securing an enactment by the legislature which would enable a fixed and definite majority to form an organization that would possess the power to construct an adequate system of

irrigation".[1] Both the Republicans and Democrats in Stanislaus County advocated in their political platforms an irrigation law that would

> embody the fundamental ideas of the previous efforts, that would bring the land and the water into joint ownership, that would force an organization by the votes of the electors, that would create a corporation--a public corporation capable of acting independently of the refractory minority--that possessed adequate power to construct an irrigation system...that would make the watering of the plains a public duty and service through a legal machinery provided by the State.[2]

The Democrats nominated the Honorable C. C. Wright, a prominent attorney in the valley, as its candidate for assemblyman in 1886. Mr. Wright was a native of Iowa, but had been in California since the early days. He had been a school teacher in the La Grange School and while still teaching had been admitted to the Bar by the State. He held the county office of district attorney and later become a trustee of the Modesto schools. Mr. Wright was obviously public spirited and possessed positive convictions plus the "moral courage to adhere to them in face of opposing forces".[3] He campaigned solely on the promise to put through a law for irrigation and was elected by a large majority.

As soon as Wright took office he began working for the passage of an irrigation bill that would not only have

1. Elias, Stories of Stanislaus, 55
2. Ibid.
3. Ibid., p. 56

teeth in it, but would be able to use them if necessary against the minority of anti-irrigationists. The bill was introduced the very first day that bills could be introduced.[1] The first draft of the bill had been prepared by a Mr. Thomas A. Coldwell, an attorney who had been district attorney a few times. He had been requested to do this by his brother John B. Coldwell, a local farmer and ardent advocate of irrigation. Coldwell had been at least partly responsible for the West Side Irrigation Bill.[2] But the finished bill was the work of Mr. Wright, and its passage through the legislature was aided and abetted by him.

The passage of the Wright Bill through the legislature was extremely slow and protracted. No measure ever received closer scrutiny or criticism.[3] The entire state was keenly interested in the bill, and fortunately the bill received the support and approval of the press. The best legal minds of the commonwealth offered a few necessary amendments. The people closely watched the passage of the bill "as the measure was one of vital importance... and presented a novel departure in principle and practice... in the irrigation of the State's arid domain".[4] The Wright Bill eventually got through the legislature. On

1. Elias, Stories of Stanislaus, 57
2. Supra, p. 19
3. Elias, op. cit. p. 57
4. Ibid.

the final roll call it received the unanimous vote of both houses.[1] It was signed by Governor Washington Bartlett on March 7, 1887.

"By the provisions of the Act, the lands to be watered from a given source might be included in an irrigation district when so determined by a majority of the freeholders, the cost to be borne in equal proportion by those who were to be benefitted."[2] Superior Court Judge Fulkerth of Stanislaus County said about the irrigation districts that were created under terms of this Act: "These districts are quasi-public corporations, with boards of directors having similar powers and performing similar duties, within certain defined limits, as boards of supervisors of counties."[3] This looked like the real thing. By the close of 1889, twenty-six irrigation districts, including the Modesto and Turlock districts, had been formed under the Wright Act.[4]

When the legislature passed the Wright Act, it should also have passed a riot act, because there was stirred up a furor that lasted some fifteen years. The small farmers and progressive large farmers who were in favor of irrigation, and the conservative, reactionary, big (and some little) farmers were at each others throats almost con-

1. Elias, Stories of Stanislaus, 57
2. Bancroft, History of California, VII, 742
3. Santa Fe Railroad, San Joaquin Valley of California, 16
4. Bancroft, op. cit., p. 742

stantly during the fifteen years following the passage of the Wright Act. Every legal and most illegal means were used to prevent the consummation of the intent of the Wright Act by the anti-irrigationists. The pro-irrigationists held on grimly, and, very fortunately for irrigation, eventually won.

The first reaction to the Wright Act was in the tremendous ovation given Assemblyman Wright when he returned to Modesto after his maiden term.[1] He was met at the railroad station by throngs of his constituents, whom he had obeyed honestly, honorable, faithfully and conscientiously in the letter and in the spirit. "He had written into the statute law an enactment that, in its final analysis, meant more for the economic development of the State than any other bill that had ever been adopted by the legislature."[2] He was "tendered an ovation that had never before nor since been given to a representative from this county under any circumstances. It was the delicious hour of triumph and victory and honor for Mr. Wright".[3]

The hour of Mr. Wright's triumph, however, was short lived. He was roundly abused and was bitterly assailed by the anti-irrigationists, many of whom soon became his

1. Smith, Garden of the Sun, 461
2. Elias, Stories of Stanislaus, 57
3. Ibid.

implacable enemies. Much of this antagonism was personal and probably hurt this conscientious public servant badly. Not all who were against Mr. Wright were anti-irrigationists. Many of the lukewarm pro-irrigationists also turned against him when litigation began against the district and threatened to continue interminably and threatened to wreck the good work begun and prevent the fruition of the plans of the pro-irrigationists. Throughout this period of personal grievance against the father of the Wright Act, Mr. Wright "acted as the man who possessed a clear conscience regarding his past efforts for the community," the valley, and the State.[1]

Due largely to the unfair criticism levied against Mr. Wright, in 1889 he left Modesto for the metropolis of the south, Los Angeles, because of "ill health".[2] Later, after the obvious success of the Modesto Irrigation District, many of his former enemies joined with those friends who had been constantly loyal, and Mr. Wright's "name was constantly mentioned with praise by those who had formerly bitterly assailed him".[3]

In the evaluation of the Wright Act we have to look at both sides of the irrigation question. Obviously it was neither as good as the irrigationists had hoped it

1. Elias, Stories of Stanislaus, 58
2. Ibid., p. 56
3. Ibid., p. 58

would be, nor was it as bad as the anti-irrigationists claimed. Woehlke says that by 1890 the irrigation districts were failing "by the dozen".[1] These failures were due to various weaknesses that were inherent in the Wright Act, plus weaknesses of overconfidence, overexpansion, poor management, inexperience and other problems that faced the directors of the newly created irrigation districts. In fact these weaknesses "brought to grief all but four of the original fifty districts that were organized under the Act".[2] Two of these four solvent districts were the Modesto and Turlock Districts. The reputation of irrigation bonds almost hit rock bottom under the Wright Act and caused intense trouble for both the bondholders and the poor, struggling irrigation directors. Costs of projects increased because of the low sale value of irrigation bonds. The newer irrigation districts created under the amendments to the Wright Act had to live down the "bad reputation of California District Irrigation Bonds issued under the Wright Act".[3]

A government report of 1901 went so far as to say that "opposition to the Wright Act has caused many to

1. "The Great Valley", Sunset, XXIV, 293, (Feb., 1915)
2. Cleland, California March of Industry, 293
3. Adams, "California District Irrigation Bonds", Sunset, XXVII, 326 (Sept., 1911)

oppose all laws."[1] This of course is ridiculous and is going too far. It is true that the benefits expected from the Wright Act were not immediately felt. The irrigation districts, which, after all, were public corporations, should have been aided and controlled somehow by the State, especially in the early experimental stages. However it was during this time of virtual stumbling in the dark so far as precedents were concerned that the office of state engineer was temporarily abolished.[2] The absence of a competent (or even semi-competent) state engineer left the irrigation district directors with inadequate supervision. Thus the districts were left to hire engineers for themselves without too much experience in such matters.

Irrigation development in California is entirely too vital to the welfare of the entire nation to allow incompetence in any form. The pro-irrigationists quickly saw the faults in the Wright Act, and in 1897 the state legislature amended it.[3] It was really more than an amending of the Wright Act. For practical purposes the amendments almost amounted to a new bill. These amendments were to iron out the worst wrinkles and mend the worst rents in

1. U. S. Dept. of Agriculture, Report of Irrigation Investigation of California, 34
2. Cleland, California: March of Industry, 204
3. State of California, Irrigation Requirements of California Lands, 48

the Act. The Act emerged stronger and better, and in 1910 the legislature further improved the Act. Adams pointed out that, as a result of this latter amendment, "now no California Irrigation District bonds can hereafter be issued...which are not morally certain to be paid, principal and interest, according to their terms".[1] This latter amendment proved a boon to directors of the irrigation districts in that it brought more willing capital into irrigation bonds, forcing the bond interest rates down.

It is largely on the basis of the revisions of the Wright Act that the proponents of irrigation claim that it was "perhaps the greatest single step ever taken in development of the San Joaquin Valley".[2] But the measure was not restricted to the Great Valley. It became of "great importance to the [entire] State [and] served as the basis for practically all similar legislation in the United States".[3] It has "resulted in the reclamation and irrigation of many millions of acres of arid land" throughout the western states.[4]

The Wright Act may be better evaluated by comparing the "before" with the "after". Prior to 1887 all irriga-

1. "California District Irrigation Bonds", Sunset, XXVII, 324, (Sept. 1911)
2. Smith, Garden of the Sun, 461
3. Cleland, California: March of Industry, 203
4. Modesto News Herald, August 29, 1930

tion projects were of a private character.[1] There was very little irrigation. The price of water was high and few could afford to pay the prices demanded by the private water interests. But after 1887 the change to public irrigation was rapid and today the people themselves control the water and not the water-capitalists who doubled as land speculators.[2]

Furthermore, on the economic side, the country is much richer due to the passage of the Wright Act. Whereas the grain land averaged less than $20 an acre yield per year, the yield from fruit lands even as early as 1890 averaged more than $100 an acre.[3] To-day (1946) the yields may run a thousand dollars an acre for intensively cultivated and irrigated lands. The late Mr. Kimmel wrote in 1943 that "We ascribe all our prosperity to...irrigation... which makes it possible to farm these lands".[4]

Section 2

FORMATION OF THE MODESTO IRRIGATION DISTRICT

We have noted previously that a "Modesto Irrigation District" was created by the state legislature in 1878, but due to apathy of many of the farmers in the actual

1. Cleland, California: March of Industry, 203
2. Bancroft, History of California, VII, 742
3. Ibid., p. 743
4. R. L. Kimmel, Secretary Modesto Chamber of Commerce, personal letter to author, March 17, 1943

creation of the public corporation, the District never became an effective, operating body.[1] But under the Wright Act, the irrigationists wasted no time in getting organized and getting the proper legal machinery in operation to carry out the intent of the Act.

The Wright Act required that a minimum of fifty freeholders should sign a petition to the county board of supervisors in order to organize an irrigation district.[2] The irrigationists in the Modesto area began circulation of the petition almost before the ink of the governor's signature became dry. The Wright Act was signed on March 7, 1887 and the freeholders' petition, signed by seventy three freeholders, was dated a month and a half later, April 25, 1887.[3]

Two weeks notice was given in the Modesto Daily Evening News of the intent to present the petition to the Stanislaus board of supervisors on Wednesday, May 11, 1887, at 11 o'clock A.M.. The meeting was duly held and the petition presented to the board. Twenty four pro-irrigationists, but not a single anti-irrigationist, appeared before the board of supervisors. The board was relatively cautious, however, and repeated adjournments delayed final action for nearly a month. Finally, on

1. Supra, p. 19
2. Minutes of Board of Directors, I, 2,3
3. Elias, Stories of Stanislaus, 70

June 7, 1887 the board of supervisors voted that:

> ...it duly appearing to the board that the territory comprised within the boundaries hereinafter described is susceptible of irrigation by the same system of works applicable to the other lands in such territory and that all such lands will be benefitted by irrigation by such system. It is therefore ordered by the Board of Supervisors of the County of Stanislaus that the territory comprised within...be and the same is hereby established and defined for organization as an irrigation district under and persuance of an Act of the Legislature of the State of California entitled "an Act to provide for the organization and government of irrigation districts and to provide for the acquisition of water and other property and for the distribution of water thereby for irrigation purposes" approved March 7, 1887, be known and designated as Modesto Irrigation District.[1]

Officially the Modesto Irrigation District was born this day. The pro-irrigationists had won the day and were left, at least temporarily, in charge of the field, or rather in charge of the many fields newly placed under the Modesto Irrigation District. An election was set for July 9th to allow the voters to pass upon the project and to choose its first officials. The result of the election overwhelmingly gave irrigation the green light. "Irrigation yes" had received the very complimentary vote of 700 while "irrigation no" received the total of only 156 votes.[2] Unfortunately the 156 votes against irriga-

1. Minutes of Board of Directors, I, 13
2. Ibid., p. 24

tion were largely by wealthy land owners "who did not desire irrigation under any plan...who, during their entire lives, had been accustomed to dry farming on a large scale and whose broad domains under the old system...had given them affluence and comfort and a dominating influence in the community, [who] ...felt themselves unfitted to undertake a new vocation in the line of agriculture, [who] were opposed to the imposition of a tax which they assumed would be burdensome".[1]

Fortunately all the directors who were elected at this time "were ardent irrigationists...who had previously participated in the irrigation movement from its inception".[2] The newly elected officials first met as an official body July 23, 1887 and organized themselves with Robert McHenry as the first president.[3] Robert McHenry was president of the First National Bank of Modesto and also owner of the old Bald Eagle Ranch on the McHenry Road north of Modesto.[4] With speed characteristic of the irrigationists, the new board ordered a survey for a canal at the very first meeting.[5]

After the organization of the board, the directors had their hands full of uncharted problems. Hidden shoals

1. Elias, Stories of Stanislaus, 70
2. Ibid., p. 71
3. Minutes of Board of Directors, I, 28
4. Elias, op. cit. p. 71
5. Minutes of Board of Directors, I, 28

and rocks, vicious, unknown currents abounded. These newly elected directors

> undertook a great enterprise under a new law, the provisions of which were untried and the validity of which was as yet unadjudicated. To all the directors and to those to whom the administration of the law and the application of communal irrigation were delegated, the procedure was not only novel, but the manner of carrying forward the undertaking a matter of serious conjecture. There were no precedents to guide the official minds, much less to direct their activities. The first directors groped for means and methods. They pioneered the way. The colossal magnitude of the problem necessarily impelled slow and deliberate action. An error in the initial work would spell ultimate failure...Upon its success depended the fortunes and prosperity of the entire population of the area.[1]

Section 3

PRELIMINARY SURVEYS

At first the directors of the Modesto Irrigation District had expected to operate alone in procuring water for lands within the District, although as early as September 5, 1887 the directors voted a resolution to appoint a committee to confer with the Turlock Irrigation District "concerning the building of a [joint] dam...for the purpose of diverting the waters of the Tuolumne River for irrigation purposes".[2]

1. Elias, Stories of Stanislaus, 69,70
2. Minutes of Board of Directors, I, 34

July 30, 1887 the board voted "that Robert McHenry and J. W. Davison be elected a committee of two for the purpose of communicating with the different engineers [available in the state] concerning the surveying of a canal for the District".[1] The committee reported back to the board on August 6 and recommended that engineer C E. Grunsky be appointed chief engineer for the District. The board likewise selected P. J. Hazen and C. A. Stonesifer attorneys for the District.[2]

The same day, August 6, 1887 the board ordered its first preliminary plans and estimates for irrigation development.[3] Engineer Grunsky reported back to the board on October 20, 1887 with a report which included three possible routes for canals.[4] The first route suggested was for a Tuolumne River dam and a canal from there to the valley floor. The second proposed route was from a dam site on the Stanislaus River. The third route proposed was for a large dam on the Tuolumne River and only a small canal from the Stanislaus River to water the northeastern part of the District.[5]

In the meantime the board had appointed a committee (J. W. Davison) to file notices of appropriation of water

1. Minutes of Board of Directors, I, 29
2. Ibid., p. 30
3. Ibid., p. 31
4. Minutes of Board of Directors, I, 37
5. Ibid., p. 37

on both the Tuolumne and Stanislaus Rivers for the use of the Modesto Irrigation District. These notices were posted on the 18th and 24th of August, 1887.[1]

Engineer Grunsky's estimate of cost ($640,000) for a 90 foot high dam on the Stanislaus River about two miles above Knights Ferry was rejected by the board because it was believed the cost was excessive. New plans were ordered drawn up by the engineer.

On November 2, the board instructed the secretary to correspond with the county recorders of both Calaveras and Tuolumne Counties asking them to funish to the board any information regarding previous appropriations of water on the Stanislaus River for irrigation or other purposes. At the same meeting director Davison was appointed a committee of one to go with engineer Grunsky "to examine the headwaters of the Stanislaus River and report as soon as possible if in their judgment said river or any of its tributaries contain places where water may be stored or lakes which may be tapped at a reasonable cost that water may be furnished to the lands of the Modesto Irrigation District in times of insufficient flow in the natural channel of said river that the water so impounded or obtained by draining or tapping lakes furnish a supply for such deficiency" in the normal flow of the river.[2] And

1. Minutes of Board of Directors, I, 34
2. Ibid., p. 39

again J. W. Davison and the engineer were authorized to post notices of appropriation of water in the name of the District.

On November 19, engineer Grunsky made his second report to the board on the feasibility of using the Stanislaus River as a source of supply and storing water there for the summer use. The board then received, approved and placed on file the report by Grunsky.

The board was convinced that no matter which route might be eventually chosen for a canal to bring the river waters to the plains between the rivers, it would cost a lot of money. And so the board on November 19, 1887 ordered a special election to be held within the District to vote on a bond issue to the extent of $800,000, which was determined by the board to be the amount necessary for the construction of the necessary canals and the works and acquiring the necessary property and rights therefor and otherwise carrying out the provisions of the Wright Act.[1]

The voting of the bonds at the special election of December 19, 1887 was almost a foregone conclusion. Out of a total vote of 515, 439 voted for the bonds and only 76 voted against them.[2] This was an affirmative vote of more than 85% or almost 6 to 1 in favor of the bonds.

1. Minutes of Board of Directors, I. 41
2. Ibid., p. 46

With the approval of the bonds the slow process of making thorough surveys for canals and dams was continued. Mr. Grunsky was working practically alone against serious obstacles. In June, 1888, the secretary of the board "was directed to communicate with the Governor and State Engineer and request them to allow Mr. Grunsky to examine all documents and maps in the State Engineers office and obtain all data and information beneficial" to the District.[1] Later in the same month (June 16th) the board authorized engineer Grunsky to "employ such assistants...as may be necessary for his work" subject to the approval of the board.[2]

On the same day the board, which a few days earlier had visited the proposed dam site on the Stanislaus River, discussed the several proposed routes. The board, by a vote of four to one, decided to adopt the Stanislaus River as the source of water supply for the District.[3]

On July 14, 1888 the board authorized the issuance of $500,000 of bonds to raise money for the construction of canals and works, the acquisition of property and rights, and otherwise to carry out the objects and purposes of the District.[4]

1. Minutes of Board of Directors, I, 60
2. Ibid., p. 61
3. Ibid.
4. Ibid., p. 70

By this time, however, the anti-irrigationists were beginning to gain control over the board. On October 2, 1888 the directors voted "that the services of all employees of this board except the secretary be dispensed with".[1] The board continued to meet as a legal body but no work was being carried on by it.

Public opinion soon forced the board to resume operation. Many big land owners, however, saw their opportunity to get their large (and highly taxable) acres out of the District. On February 23, 1889 Grunsky was called to meet with the board on February 26, "to confer with and advise said board as to what lands of the Modesto Irrigation District, if any, the best interests of the District require to be excluded from said District."[2] A bit later (March 2, 1889) the board voted to

> communicate with Mr. Grunsky and ask him to name the sum it will cost this District to make the necessary examinations of the Stanislaus and Tuolumne Rivers to determine the most suitable and cheapest point at which to divert a supply of water to irrigate this District and to do the necessary work to determine the probable cost of the necessary system of works to irrigate said District and as a part of said work to make the necessary examination of the District and suggest to this board what portion or portions of said District may be advantageously excluded.[3]

1. Minutes of Board of Directors, I, 82
2. Ibid., p. 93
3. Ibid., p. 95

The above was obviously a compromise. The board offered to allow certain lands to leave the District provided that the anti-irrigationists on the board would allow the board to finish its plans to irrigate the balance of the District. Better a half a loaf, felt the irrigationists, than no loaf at all.

The farmers interested in removing their lands from the District (or rather removing the District from their lands) petitioned the board praying for the exclusion of certain lands.[1] A pro-irrigationist, George T. Hughes, appeared in person to protest against the exclusion of these lands, but the board could not recognize the personal appeal of only one man, so they granted the petitioners their demands. On July 20, 1889 the order excluding the lands of 25 owners was granted by the board.[2] All told, some 28,000 acres were excluded from the District at this time.[3]

With these lands being excluded from the District, almost the entire eastern end of the Modesto Irrigation District was cut off. Some of these lands were foothill lands and could not have been irrigated very successfully anyway by the gravity type canals and works proposed for the District. Some of the lands were near the rivers and

1. Minutes of Board of Directors, I, 109
2. Ibid., pp. 123-137
3. Elias, Stories of Stanislaus, 70

could be irrigated from them rather easily, especially with pumps. But the main reason that most of the land was withdrawn from the District was because they did not want to stand the expense of irrigation. The granting of these "prayers" cost the District tax revenues for its coffers--from those who were more able to pay. The pro-irrigationists have had some comfort in the fact that these lands have largely been incorporated with the Oakdale or Waterford Irrigation Districts that were organized later.

In the meantime (March 9, 1889) the board had filed notices of appropriation of 250,000 miners inches of water on both the Tuolumne and Stanislaus Rivers.[1] Although the Stanislaus had been chosen only the year before as the source of water supply, sentiment was developing in favor of the Tuolumne River route. Part of this pressure was brought by those who hoped to cooperate with the Turlock District in providing irrigation for both districts, and part by those who would benefit by the board purchasing the Wheaton Dam and water rights. On June 18, 1890 the committee on rights of way reported that they had purchased the Wheaton Dam and water right for $21,000, $10,000 of which was in cash and $11,000 in bonds of the District.[2]

1. Minutes of Board of Directors, I, 97
2. Ibid., p. 227

A new engineer, Mr. Luther Wagoner, had been hired by the District and made his report August 25, 1890 which said that he had completed preliminary surveys from the Tuolumne River dam site and had "found an excellent line for a canal".[1] He advised the board that they should construct a 94 foot high dam and construct a canal from the dam with a capacity of 640 cubic feet per second at the dam and reducing to 500 cubic feet per second by the time it reaches the District line.[2]

The board thereupon reversed its resolution of two years before and voted to take its water from the Tuolumne River.[3] They have never had occasion to regret the change, which has made possible a fine spirit of cooperation between the Modesto and Turlock Districts. Besides the Tuolumne River, although it is south of the Stanislaus, is a more dependable source of supply. The high point in the Tuolumne River watershed is about 13,000 feet and drains about 1500 square miles of territory.[4] The high point on the Stanislaus watershed is only about 11,000 feet and it drains only some 900 square miles of area. The Tuolumne River's mean annual discharge of water is about 2,080,000acre feet while that of the Stanislaus is only about 1,400,000 acre feet.[5]

1. Minutes of Board of Directors, I, 249
2. Ibid.
3. Ibid.
4. U. S. Dept. of Agriculture, Rivers and Floods, 43
5. ---, Reconnoissance Soil Survey, 148

Chapter III

PROGRESS vs. INACTION

Section 1.

CONSTRUCTION OF LA GRANGE DAM

It was realized by the earliest irrigation visionaries that some large diverting dam was necessary in order to act as a storage reservoir to water the thirsty lands during the long, hot, dry summer months. The Wheaton Dam occupied the best and most logical site for such a structure. It had been built in 1852[1] and had been used by the miners panning for gold.[2] It was no small affair, for it contained more than a quarter of a million square feet of timber, secured by over sixteen tons of iron bolts.[3] But it was still inadequate for anticipated requirements.

On August 9, 1890 the order of business was suspended and the board proceeded to the discussion of the subject of a joint dam to be built in conjunction with the Turlock Irrigation District.[4] The chairman of the board, A. G. Carver, appointed Mr. F. A. Cressey "as a committee on construction to act in conjunction with one to be similarly appointed by the Turlock District".[5] It was agreed that the two districts would investigate, through

1. Elias, Stories of Stanislaus, 20
2. Smith, Garden of the Sun, 462
3. Elias, op. cit. p. 20
4. Minutes of Board of Directors, I, 243
5. Ibid.

their engineers, and would recommend a plan of action and specifications for a dam. In case there was no agreement, a single engineer would be chosen to decide upon plans and specifications.

By August 25, 1890 there seemed no specific plan acceptable to both districts and, "no agreement being reached, the plans and specifications were given in charge of the committee on construction...to be by them submitted to a consulting engineer for his dicission" (sic).[1] On the basis of this disagreement, Mr. G. H. Mendell was employed as the consulting engineer.[2]

When plans were finally drawn up acceptable to both districts, bids were advertised for and invited from contractors. The only bid entered was opened September 18, 1890. The bid, of $10.45 per cubic yard, was rejected as being too high.[3] So the joint boards "deemed it for the best interest of the districts that said dam be built under their own superintendence".[4] The board thereupon ordered their committee on construction to "proceed at once to construct said dam...under the direction and to the satisfaction of the engineer".[5]

But the districts hesitated to go ahead with construction of such a vital enterprise by themselves. Finally the

1. Minutes of Board of Directors I, 250
2. Ibid.
3. Ibid., 256
4. Ibid., 257
5. Ibid.

boards decided that they had better re-advertise for bids for a contractor to construct the dam. On April 7, 1891 the board rescinded its order of September 20th for the construction of the dam under its own superintendence and ordered that its construction committee "proceed to advertise for bids...in conjunction with Turlock Irrigation District, in the manner required by law".[1]

Three bids were received for the construction of the joint dam. The bids ran from a low bid by R. W. Gorrill of $10.39 per cubic yard to a high of $10.85 by J. D. Dougald. The third bid, by the San Francisco Bridge Company, was for $10.43.[2] The work was given to Mr. Gorrill, who had been the lowest responsible bidder. The cost at the time the contract was let was estimated at $332,480.[3] The actual cost, due to many unforseen difficulties and additions to the original plans ran about $550,000.[4] The dam was to have been completed by January 1, 1893.[5] The actual construction of the dam was begun on June 25, 1891, but high water the first winter delayed work and the dam was not completed until September, 1893.[6] Describing the problems of construction, one of the engineers reports:

1. Minutes of Board of Directors, I, 293
2. Ibid., p. 303
3. Ibid., p. 317
4. Schuyler, Reservoirs for Irrigation, Water-Power and Domestic Water Supply, 257
5. Minutes of Board of Directors, I, 316
6. Modesto Irrigation District, (General Information) under "La Grange Dam", no p. number

The months of July and August of that year were spent in construction of commodious camp buildings and storage houses for cement and the installation of the mixing and operation plant, which was a most complete one. For operating the crusher, washer and mixer, a sixty horse-power engine was used and there were no less than seven huge derricks employed in the excavation, quarrying and placing of the materials.

After the "snow raise" of that year (1891) had subsided, the water of the river was carried above the bottom and through the site in four flumes, the largest of which was fourteen feet wide; these flumes discharged over the natural rock barrier just below the new dam site on which the old Wheaton Dam had been. The river was very low that year but there was so much water in the bottom that it was necessary to run a six-inch centrifugal pump continuously both night and day during the time that the excavation was being placed.

Work was stopped in December because of extreme high water and was not resumed on the dam proper until the following July. To provide for the passage of the water through the site at ordinary stages of the river... [three tunnels] were built through the dam... These tunnels...were closed after the dam was completed and the tunnels were then filled up with concrete.[1]

Good progress was made in 1892, the structure reaching the height of seventy feet. There was some very rough rises in the river which forced the contractors... to change their system of laying the stone blocks from the derricks to an overhead cable.

The contractors took advantage of the low water season of 1893 in which to close the two lower tunnels with

1. Elias, Stories of Stanislaus, 65

> solid masonry. It is worthy to note that three days after the dam was completed, the river raised so that there was a depth of over six feet over the entire crest and that during the whole winter the water never got less than three feet deep there.[1]

The completed dam was 301 feet long, 127 feet wide and cost $543,164.16.[2] At the time of its completion it was the highest overflow dam in the world.[3] It is located at the mouth of a narrow box canyon on the Tuolumne River a short distance above the small town of La Grange. After the completion of the La Grange Dam and the necessary canals and other works supplementary thereto "no engineering volume on the subject and no governmental report regarding irrigation was complete without a description of these systems. They immediately took rank among the best of their kind. The government engineers referred to them as 'the best example of American irrigation practice'".[5]

Regarding the cost of the dam which exceeded the estimate by some $200,000, Schuyler says that "the excessive cost of the work was doubtless due to the uncertainty as to the value of the bonds" and that "under ordinary conditions of prompt payment in cash the construction

1. Elias, Stories of Stanislaus, 66
2. Modesto Irrigation District, Annual Report of Secretary, 1938, p. 1
3. Schuyler, Reservoir for Irrigation, Water-power and Domestic Water Supply, 259
4. Ibid.
5. Elias, op. cit., p. 64

should have been done for one-half the actual cost".[1] On the other hand, in behalf of the districts, the Stanislaus Board of Trade said that the "cost of construction was far lower proportionally than in any of the government projects; expense of operation lower".[2]

The discussion regarding the dam would not be complete without mention of the canal systems that connect to the dam. Water is taken from the dam on the Turlock side through a 600 foot tunnel cut through solid rock. On the Modesto side a canal of a capacity of 750 second feet was constructed. This main canal is about 25 miles long and has seven lateral canals to spread the waters uniformly throughout the District.[3] Lesser branch canals have been and are being constructed.

A problem that had to be settled was the height at which the water was to be diverted into the Modesto or Turlock canals. Turlock began constructing its works so as to be able to divert water at a level about 20 inches below the level adopted by the Modesto Irrigation District and agreed upon by both districts.[4]

Turlock ignored the first request for a meeting to determine a compromise or settlement of this difference.[5]

1. Reservoir for Irrigation, Water-Power and Domestic Water Supply, 259
2. Stanislaus Board of Trade, Modesto-Turlock Irrigation Districts, 5
3. Elias, Stories of Stanislaus, 63
4. Minutes of Board of Directors, II, 210
5. Ibid., p. 216

As late as July 1, 1902 the districts were still squabbling over the elevation at which water was to be diverted from the dam to the canals.[1] But eventually these and other matters were cleared up to the mutual satisfaction of both districts.

Section 2

EARLY LEGAL DIFFICULTIES

The early problems of the Modesto Irrigation District were by no means confined to the engineering field. The District was involved in continual litigation. One group of legal problems involved the questions that arise in connection with any undertaking of any importance and are particularly frequent in connection with the California water laws. The second group of legal problems were those that were brought about by anti-irrigationists deliberately trying to wreck the District. "The history of irrigation in California...has shown an unusual mingling of romance and selfishness. Along with remarkable ability shown by engineers and irrigators in developing and using rivers, has gone controversy over water rights in courts and armed raids to destroy headgates or interfere with the use of canals."[2]

1. Minutes of Board of Directors, II, 216
2. U. S. Dept. of Agriculture, Report of Irrigation Investigation in California, 13

Just what were these water rights over which these legal and physical fights developed? No one really seemed to know and the courts decided first one way and then the other. Until 1914, the legislature had provided no statute that clearly set forth the rights of the litigants.[1]

We do know what each side claimed for its rights. The entire question revolves around the use of the water. The landowners along the river banks were entitled, according to the old English common law, to an "undiminished flow of the stream past their land".[2] All owners of land away from the rivers would thereby be strictly forbidden to use the water of the river.[3] Even the riparian owners were often at each others throats, for the civil code of 1873 stated that "the first in time was the first in right".[4] "Any appreciable reduction in the flow of the water was sufficient cause for court action."[5]

Competing with these riparian right owners were the appropriators of water, including the miners and the irrigation districts. When the miners first came to California they took what water they needed by the simple expedient of posting a notice of appropriation. Most of these miners

1. State of California, Biennial Report, 1924, p. 8
2. Bancroft, History of California, VII, 12
3. Smith, Garden of the Sun, 464
4. Ibid., p. 465
5. Ibid., p. 464

were from states where there was no water shortage. They ignored riparian rights and gave precedence to the doctrine of appropriation.[1] Obviously to the miners, and to the majority of the common people of California, this doctrine of riparian ownership, based on the common law of England, was "unsuited to the exigencies of the time and place".[2]

The miners' usage of water and the theory of appropriation furnished a precedent for the later irrigation works. The arguments continued however between the riparian owners and the water users. The riparians claimed that the miners had no business on government property in the first place and therefore whatever was done by them was illegal and could not set a legal precedent. They pointed out that a California statute of April 13, 1850 approved the common law of England which guaranteed the riparian rights.[3]

The legislature in 1872 changed the law to favor the water appropriation system of the miners. This would have solved the vexatious question except for the fact that fourteen years later (1886) the Supreme Court of the State of California rendered an opposing decision in the case of Lus vs. Haggin.[4]

1. Smith, Garden of the Sun, 464
2. State of California, Biennial Report, 25
3. Ibid.
4. Smith, op. cit., p. 465

It seemed that:

> A settler had a legal right, based on statute law to go upstream, post a notice of appropriation, file it. Then the riparian owner downstream, usually a cattleman, had the legal right, based on judicial decision, to stop him by court injunction for violating the riparian law.[1]
>
> Irrigation law in California proceeded to march in double time in both directions at the same time. No wonder that dams were blown up, that irrigationists and cattle men fought and won and lost all at the same time and that even the lawyers became dizzy.[2]

"It was notorious that anyone attempting to utilize the streams of California for any purpose had to add...a large and continuing outlay for litigation to maintain his right to the water."[3] It did not make much difference to the farmer without any riparian rights, who owned the water if it was not himself. He got soaked if he wanted any water.

The attitude of riparian and appropriator alike is summed up in the comment of one of them: "I filed on this water, and it is mine to do as I please. I can run it in a gopher hole if I want to. I can sell it... or waste it on the sand and neither the government nor the state has any right to object".[4]

1. Smith, Garden of the Sun, 465
2. Loc. cit.
3. U.S. Dept. of Agriculture, Report of Irrigation Investigation of California, 24
4. Ibid., p. 37

On such a background of competing selfishness, it is no wonder that the irrigationists were wild to get their own water rights and operate their irrigation works for the benefit of themselves. The Modesto Irrigation District was created in the midst of this controversy between the riparians and the appropriators. And, as might have been expected, both the riparians and the appropriators launched injunction suits against the District to prevent it from using the La Grange Dam. The interim between the completion of La Grange Dam and 1900 was taken up by these suits and others.

One suit was more humorous than serious, being a suit brought by Mr. R. L. Bullard asking for $800.00 for La Grange Dam, on the ground that the dam was constructed on his property.[1] The joint board refused to recognize the claim.

More serious was a suit filed by Mr. Wheaton for an additional $130,000 for his water rights. He had sold his dam and water rights at practically cost to the Modesto Irrigation District.[2] But when Turlock joined with Modesto in the construction of a dam, and when he realized that his property and rights were quite valuable, he instituted his suit. The first court to try the case was in Stanislaus County and it valued his rights at the ridiculously low

1. Vasche, Story of Our County, 96
2. Supra, p. 41

figure of $95 per acre for his five acre holding.[1] A re-trial before a less partical jury in Tuolumne County (in which the acreage was located) awarded him $50,000.[2] The matter was finally settled out of court for $35,000 of which the Turlock District was to pay $32,500 and the Modesto District was to pay $2,500 in addition to the $21,000 she had paid previously.[3]

Even more serious was the celebrated Tregea case, which went through the Superior Court of the county, the Supreme Court of the state, and finally to the United States Supreme Court. This case was instigated by the anti-irrigationists to test the validity of the $800,000 bond issue and the sale of the first $400,000 worth of bonds. The courts gave a decision favorable to the District's organization and its bond issue.[4] Attorney C. C. Wright, of the Wright Act fame, who had been hired as attorney of the District on April 7, 1894, was appointed on August 7, 1894 to go the Washington to argue the Tregea case.[5] After the successful conclusion of the case, Wright resigned on September 3, 1895.

During this period the people again showed their confidence in the District by authorizing an additional

1. Vasche, Story of Our County, 96
2. Ibid.
3. Elias, Stories of Stanislaus, 73
4. Modesto Irrigation District (General Information), under "Organization of District", (no page number)
5. Minutes of Board of Directors, II, 109, 134

$350,000 bond issue.[1] They did this with the understanding, however, that nothing would be done until the Tregea case was settled.[2]

Probably the most serious case was one instituted in 1898 by a former director, R. H. McKimmon, to obtain a judgment dissolving the District completely.[3] The board of directors were not guiltless in the suit, because when they were ordered to show cause why the proceeding against the District should not be instituted, they refused to try to show cause and actually adopted a set of resolutions approving the proceedings. This was done ostensibly to allow the state to determine further the legality of the District, but the raw truth is that a majority of the board were determined to allow the District to die a legal death. The reason for this state of affairs is discussed later.[4]

The pro-irrigationists had expected the District to come through with flying colors, because of previous judgments acknowledging the constitutionality of the District and because "Judge Prewett in the course of the trial intimated that he believed the statute of limitations barred the action".[5,6]

1. Minutes of Board of Directors, II, 207
2. Modesto Irrigation District, (General Information), under "Organization of District", (no p. number)
3. Elias, Stories of Stanislaus, 87
4. Infra, p. 58
5. Elias, op. cit., p. 88
6. The District was organized in 1887 and the suit was not instituted until 1898.

But the judgment rendered in May 1900 disappointed the pro-irrigationist. The decision is as follows:

> It is hereby ordered, adjudged and decreed that the defendant, the Modesto Irrigation District, unlawfully and without right claims to be and acts as and usurps, intruded into and unlawfully exercises the functions of a public corporation, to wit, an irrigation district, and unlawfully and without right claims to be legally organized and existing as such irrigation district under and by virtue of the provisions of an act of the legislature of this State, entitled: "an Act to provide for the organization and the government of irrigation districts and to provide for the acquisition of water and other property and for the distribution of water thereby for irrigation purposes," approved March 7, 1887.
>
> And it is further ordered, adjudged and decreed that the defendant, the Modesto Irrigation District, be and it is hereby excluded from and forever injoined and restrained from exercising any of the corporate rights, powers, and franchises of an irrigation district; and that the same be and it is hereby abated.[1]

This was just what the anti-irrigationists had been hoping for ever since 1887. It furnished the incumbent directors (a majority of whom were opposed to irrigation) with a pretext for inaction. It gave encouragement to the further institution of harassing suits against the District.[2]

Fortunately for irrigation two more suits were working their ways through the maze of the courts. One of them

1. Elias, Stories of Stanislaus, 88
2. Ibid.

involved the Modesto Irrigation District. A Mr. George Herring, a foreigner, who held bonds whose interest coupons in arrears amounted to $17,500, brought suit to compel the board to pay the interest due according to the terms of the bonds. This was the first test of the legality of the bond issue, and so the anti-irrigationists spent money freely to defeat this suit.

The issues that these anti-irrigationists used were mainly these: First, that several of the original petitioners were not qualified to sign, thus leaving less than the fifty required signatures. Second, that during the construction of La Grange Dam, bonds were traded to the contractors for work done instead of being sold on the market for cash as required by the Wright Act. Third, that the land in the district was not susceptible to irrigation and that no benefit would be derived. Fourth, that the Wright Act was unconstitutional. Judge Morrow's decision favored the bondholders on every point, saying the Herring should have judgment for the defaulted interest.[1] This should have forced the board to levy taxes to pay the interest due, which amounted then to $150,000; but the recalcitrant board members refused to do their obvious duty.

The second important case was the case of Maria K. Bradley vs. Fallbrook Irrigation District.[2] This case at

1. Elias, Stories of Stanislaus, 89
2. State of California, Irrigation Districts in California, 298

first (July 22, 1895) declared that the Wright Act was unconstitutional; but an appeal to the United States Supreme Court (164 U. S. 112) found that the Wright Act was constitutional. It was on the basis of this appeal and Supreme Court decision that Judge Morrow ruled in favor of the bondholders.

Section 3

ANTI-IRRIGATIONISTS GAIN CONTROL

Many of the difficulties described above may be traced to the personnel of the board of directors during this critical period. References have been made to the fact that the large landholders were generally opposed to the formation of the District.[1] This opposition first assumed dangerous proportions when, on April 2, 1890, Mr. R. J. McKimmon was elected to the board of directors.[2] He was the "first fruit of the effort of the anti-irrigationists to control the directorate of the district with the design of the overthrow of the district plan of irrigation".[3]

The Anti-irrigationists organized themselves and hired attorneys, forming what was called the Defense Association. This Association constantly agitated and filed numerous suits assailing the constitutionality of

1. Supra, pp 11, 16, 25, 39 ff.
2. Supra, p. 55
3. Elias, Stories of Stanislaus, 72

the districts. The legal department of the Association "worked overtime in developing methods of attack against the Wright Law and the Modesto District".[1]

In the election of February 11, 1895, McKimmon was defeated by Samuel Gates, but the irrigationists were no better off because W. W. Carter, the son-in-law of C. C. Baker, the leader of the Defense Association, defeated the pro-irrigationist W. H. Finley. One example of the inactivity of this new board is shown by the fact that for four meetings in succession, May, June, July, and August, 1896, there was no quorum present.[2] In the 1897 election C. C. Baker himself was elected to the board, and W. W. Carter, his son-in-law, was elected president.

The board did not try to continue the work on the canals or other essential work. As a protest against this inaction F. A. Cressey and W. W. Carter resigned.[3] Mr. Carter was controlled by his father-in-law, Mr. C. C. Baker, the head of the anti-irrigationists but he was "at heart a pro-irrigationist".[4] The Defense Association, taking advantage of the strange apathy into which the majority of people had been lulled by the propaganda of the Defense Association, secured the appointment to the board

1. Elias, Stories of Stanislaus, 78
2. Minutes of Board of Directors, II, 232
3. Ibid., pp. 267, 268
4. Elias, op. Cit. p. 78

of anti-irrigationists, John Adams and L. A. Finney.[1] This gave a majority of the board to the anti-irrigationists, C. C. Baker, John Adams and L. A. Finney.

They used this valuable asset to the detriment of the District. They refused to promote any of the work of the District. They approved the McKimmon suit previously mentioned.[2] And finally refused for four years, (1897 to 1900) to make any tax levy for the support of the District. This anti-irrigation majority was able to continue in office largely because of an active minority in the rural portions of the District. It should be borne in mind that Modesto itself constantly returned pro-irrigationists despite the threats to boycott the town.

Ultimately the irrigationists decided that the time had come for drastic measures to overthrow the hostile majority on the board.[3] These irrigationists, in order to combat the Defense Association, organized the Board of Trade. Progessive attorneys, who served without compensation, helped this organization. They preferred charges in the Superior Court against the opposition members of the board on account of their inaction. But these charges were dismissed by the court.

1. Minutes of Board of Directors, II, 282
2. Supra, p. 55
3. Elias, Stories of Stanislaus, 79

Finally the anti-irrigationists overstepped themselves. The board, in their general apathy and unwillingness to proceed, failed to issue a call for the general election of 1901.

With this denial of the ver, fundamental democratic rights, a wave of indignation swept through the district which focused attention upon the unfortunate conditions into which the District had been forced.[1]

The Executive Committee of the Board of Trade instituted suit in the Superior Court to compel the board to call an election. On Saturday, January 12, 1901 Judge William. O. Minor granted "a writ of mandate citing L. A. Finney, C. C. Baker, John Adams, and Frank C. Davis to immediately call (sic) the election or to appear in the Superior Court on the following Tuesday forenoon to show cause why they had not done so".[2] The Directors were served with a summons as soon as possible.

At the trial which followed, Judge Lorigan of Santa Clara County took charge. He had promised that the trial would require only one day, despite the attorneys of the defense, who maintained that weeks would be needed. Sure enough, to the surprise of the throngs of spectators who filled the Court and corridors, the trial was over by the

1. Elias, Stories of Stanislaus, 90
2. Ibid., p. 92

day's end. The directors were compelled by this court action to call the election on the date prescribed by law.[1]

The election was held on February 5, 1901. In Division 1, T. K. Beard, irrigationist, defeated A. G. Underwood, anti-irrigationist, by a vote of 24 to 11. John Adams, anti-irrigationist, was defeated in Division 2 by W. R. High, 271 to 32. In Division 3, Frank C. Davis, pro-irrigationist, without competition, received 186 votes. C. C. Baker the ardent leader of the anti-irrigationists was reelected by the close vote of 25 to 23 in Division 4. L. A. Finney, anti-irrigationist from Division 5 was not up for election, as his term had two years more to run.

On March 5, 1901 this new board began a movement to compromise with the bondholders, who were demanding interest and interest on past due interest coupons. An invitation was extended "to all bond holders...to meet with the board of directors in consultetion on Friday, March 15, 1901".[2]

The bondholders, hoping to get back at least their principal, were willing to accept some kind of compromise. But they wanted assurances from the board that the board would act rapidly to complete the works and would not put itself in a position whereby the Defense Association could "resort to the usual tactics of delay".[3] The board there-

1. Elias, Stories of Stanislaus, 92
2. Minutes of Board of Directors, II, 382
3. Elias, op. cit., p. 99

upon appointed two pro-irrigation attorneys, S. H. Hatton and L. L. Dennett (later mayor of Modesto) to help them.

The good citizens of the community wanted to help in getting things going again. On May 7, 1901, L. A. Waymire proposed a "Plan of Financing Modesto Irrigation District, Funding its Debt, and Completing its Works".[1] This outside plan, however, was not acceptable to the board. A far more practical help came in the form of a voluntary subscription taken up by the citizens. $1,433 was subscribed for the employment of an engineer to make a survey to determine the work necessary to complete the works of the District.[2] After months of arguments on both sides, the compromise agreement with the bondholders was signed November 5, 1901.[3]

According to the preamble of this agreement, "it is the desire of all the parties hereto to adjust such differences upon the basis herein proposed and to cause to be discontinued all litigation affecting the validity of the said District and its bond issues, so that the [work may be] completed as soon as possible".[4]

To this end, the agreement provided:

1. The District would complete the works.
2. The District would give new bonds covering previous principal and interest due, in exchange for the old bonds and coupons.

1. Minutes of Board of Directors, II, 388
2. Ibid., p. 392
3. Ibid., p. 416
4. Ibid., p. 447

3. The District agreed to tax the people to pay off the bonds.

4. The bondholders would withdraw all litigation against the District.

5. The bondholders were to donate $113,000 in interest coupons on new bonds.[1]

Clearing up of this pressing bond and interest question gave the green light to the advancement of the District.

1. Minutes of Board of Directors, II, 442-459

Chapter IV

PROGRESS 1901 - 1920

Section 1

ROMANCE OF WATER JUBILEE

With the completion of the bondholders agreement the board went ahead with its plans to bring water to the thirsty acres of Paradise Valley. A notice was sent out to the contractors September 21, 1901 to finish work on the canals of the District.[1]

A petition was circulated by citizens, aided and abetted by the board, requesting a special 5% bond issue of $1,056,511 for refunding the bonded indebtedness of the District.[2] The board then called a special election to be held January 13, 1902. The election was held with 457 votes being cast. Many of the anti-irrigationists had left or refrained from voting. The result was a foregone conclusion: In division 1 the entire 14 votes cast favored the issuing of the bonds. The farmers in this area who were opposed to irrigation did not bother to go to the polls. The second division brought out 220 voters, 205 of whom voted for the bonds. In the third division 197 citizens voted. Of this number, only nine voted against the bonds,

1. Minutes of Board of Directors, II, 406
2. Ibid., pp. 421-436

leaving an affirmative vote of 187. In division four and five the vote was unanimous for the bonds, the opposition having apparently evaporated into thin air. The vote was fifteen and twelve in these two districts. The total vote was 433 for the bonds and 24 against them.[1]

As might have been expected, some of the irrigation works had begun to deteriorate long before they were used. Large canals had become overgrown with weeds. Slides had blocked canals in the foothills. The main canal had been constructed only as far as the District line. And otherwise the works were in poor condition, with the exception of La Grange Dam which had faithfully withstood the seven years of disuse.

By public subscription money had been raised to hire an engineer to make surveys to determine just what was needed to be done before the project could be consummated.[2] The bondholders, zealously living up to the terms of the compromise, paid three-fourths of the money needed for reconstruction of the upper works (to the District line) that had badly needed repair.[3]

The lower canals within the District were completed in 1902 and 1903 with a new bond issue. Everything seemed rosy. "It was the era of reconstruction. The Defense

1. Minutes of Board of Directors, II, 444, 445
2. Supra, p. 63
3. Elias, Stories of Stanislaus, 108

Association had passed out of existence. All elements worked harmoniously for the completion of the irrigation system. It was the era of good feeling. The feuds of the past were forgotten in the energy that was devoted to the building of the canals. The anti-irrigation director became extinct."[1]

Work was rushed on the upper works of the District and the board announced the completion thereof, March 7, 1903.[2] Most of the lower works were completed and accepted as of June 2, 1903.[3] Engineer H. S. Crow reported on July 7, 1903 completion of further contracts.[4] Finally on October 6, 1903 the board announced that work was completed and accepted on all canals.[5]

As the canals were put into condition to receive the longed-for water, the people of both the Turlock and Modesto District planned for a great jubilee. This Romance of Water Jubilee was a joint celebration held in Modesto April 20, 21, and 22, 1904. Mr. Elias noted that "fully five thousand visitors came to the home of the new irrigation idea to witness the fruits of irrigation and to participate in the joy of the citizens in the final triumph of the twenty year struggle".[6]

1. Elias, Stories of Stanislaus, 108
2. Minutes of Board of Directors, III, 116
3. Ibid.
4. Ibid., p. 146
5. Ibid., p. 163
6. Op. cit., p. 108

Modesto really prepared for a grand celebration: "Fresh paint of new homes glistened everywhere".[1] Everyone had been invited to Modesto to learn about the new wonder. The days of the celebration "were momentous to the region. Thirty railway coaches arrived with celebrities and friends of the community".[2]

Among these celebrities were Governor George C. Pardee; General Lauck and three colonels; B. I. Wheeler, president of the University of California; H. M Stephens, chairman of the history department at the University; Professor Elwood Mead, representing the United States Department of Agriculture. "But not the least in the eyes of his fellow-citizens was C. C. Wright, who was largely responsible for it all".[3]

Exercises were held in a city park under the trees. Both a children's and an adult chorus, as well as a double quartet, sang songs appropriate to the occasion. There was a military parade and a railroad tour of the county. Pyrotechnic displays ushered in the closing night of the jubilee.

After the excitement of the celebration the people and the District could settle down to the task of developing their gain. They did so. Although some water had

1. Elias, Stories of Stanislaus, 108
2. Smith, Garden of the Sun, 462
3. Ibid.

been turned into the canals in 1903, it was too late in the year to do any good except to test the system out, to ascertain any breaks in the ditches, and to puddle the bottom and sides of the canals and ditches.

But beginning in 1904 the irrigation water was used by as many farmers as could get the water on as much land as could be prepared for intensive cultivation. This amount was not very large, being only 6,895 acres out of 80, 564 acres in the District.[1,2] This irrigated acreage has increased steadily through years until today almost every acre within the District is irrigated. As McGroarty said, "Men once said that God had made California without a flaw except for its lack of water...It is now seen that there is no such lack."[3]

There have been several indirect benefits from the introduction of irrigation that had not been expected or planned by the early irrigationists. The droughts that had been the plague of the dry farmers would not seriously hurt the irrigators. But devastating floods had been even more frequent that droughts.[4] With the construction of La Grange Dam and the diversion of much of the spring

1. Elias, Stories of Stanislaus, 136
2. Minutes of Board of Directors, III, 69
3. California, Its History and Romance, 298
4. Coman, Economic Beginnings of the Far West, II, 298
5. Ibid., p. 303

excess of water, these floods have been at least partially controlled although as yet not completely eliminated.

With the introduction of a great volume of water on the land it soon became evident that the flooding of a field fertilized the land, while destroying insect pests, gophers, etc.[1] Another advantage obtained through irrigation is the creation of swimming holes for young and old alike by the "drops".[2]

Section 2

DALLAS-WARNER RESERVOIRS

The expansion of acres under irrigation was reasonable fast after 1904. In the six year period, from 1904 to 1910 the acreage under irrigation had increased from 6,895 acres to 28,197 acres.[3] This rapid increase in intensive land utilization called for an additional amount of water to satisfy the thirsty crops. It was entirely out of the question to build another dam to store water, but a secondary storage place was needed for irrigation water.

1. Coman, Economic Beginnings of the Far West, II, 303
2. Drops are small weir dams across the canals with wooden movable drop boards to control the height of the water back of these dams. Raising the height of these dams raises the water level of the canal behind the drops, giving a greater pressure to the water flowing into the farmers' fields upstream from these drops. Besides the drops give a slower movement of water through the canals, thus saving many acre feet of water.
3. Elias, Stories of Stanislaus, 136

There was plenty of water flowing to waste past La Grange Dam in spring and early summer months to irrigate adequately all the acres in the districts. But in the late summer and fall there was hardly enough water to put on the parching lands. With the increase in lands watered, late irrigation demands increased beyond the extent of water stored in La Grange Dam.

And so the engineer began figuring ways and means of supplying more water to the fields. Three methods were figured and all were used to varying degrees. One plan called for enlarging the upper canal works so as to increase the amount of water that would flow from the river to the District.

A second plan called for raising the height of La Grange Dam. August 19, 1912 the Modesto and Turlock boards of directors meeting as a joint board unanimously voted to raise the height of La Grage Dam 2 or 4 feet by the use of flash boards.[1] This would have given an increase in capacity, but this was considered as too risky. April 10, 1913 they voted to raise the dam two feet only.[2] Even this was too risky, so they voted April 13th instead to raise the dam only one foot.[3] That was hardly enough difference to make it worth while. Besides by this time the Dallas-Warner reservoir was working successfully and

1. Minutes of Board of Directors, V, 65
2. Ibid., p. 163
3. Ibid., p. 173

an increase in canal size and storage capacity would be better for the District.

This Dallas-Warner reservoir was designed to store water from the spring runoff to be used in the late summer. The site chosen for the reservoir was two natural lakes in the lower foothills east of Waterford. The estimates of the costs of enlarging these lakes by placing dams across their lower ends were about $200,000.[1] The Warner Lake had about 1,340 acres, while the Dallas Lake had about 1,040 acres.[2] With the construction of the dams the lake areas were increased to a total of about 2,800 acres with a capacity of about 27,700 acre feet of water.[3]

Bids had been advertised, but were lacking, so the board voted to proceed with the work under its own superintendency.[4] The money available for the construction of these foothill reservoirs ran out before the work was finished. The first estimates of the cost had been about $200,000, but that had proved insufficient and another bond election was in order. The result of this bond election which was held in November, 1910, gave 330 votes in favor of the bond issue and only 82 votes opposed.[5] With the injection of new cash into the picture, the work was

1. Minutes of the Board of Directors, IV, 123
2. Ibid., p. 130
3. Modesto Evening News, Stanislaus County (1920) p. 5
4. Minutes of Board of Directors, IV, 130
5. Ibid., p. 330

speeded up and was completed on June 14, 1911, and accepted by the board on June 24th.

In connection with these attempts to increase the amount of water available to the farms, a quarrel arose over District Engineer A. Griffin. He had consistently recommended needed improvements in the District, and appears to have been reasonably competent. Unfortunately, he had consistently made the error of underestimating the costs of the projects he had in mind. When the board voted to accept his suggestions at his estimated cost, they discovered they had to make extra assessments or call for a vote on an additional bond issue. For instance the estimated cost of the foothill reservoirs was $200,000, but actual cost ran $ 271,809.[1]

On July 10, 1911, Mr. Griffin made the following reasonable and foresighted report to the board:

> In my opinion no expense should be spared to make [a thorough study] and cover the matters of future requirements, enlarging, replacing temporary structures, comparing different designs, extension of the present [water] distributing system, drainage, pumping, additional storage, development of power and such other matters as may suggest themselves. Such a study should be put in the hands of some eminent and well known professional engineer, or firm of engineers, accustomed to the making of such studies and whose report and recommendations of bonds and the expenditure of the proceeds [should be heeded].[2]

1. Modesto Evening News, Stanislaus County (1920) p. 5
2. Minutes of Board of Directors, IV, 426

This report recognized his own weaknesses, but showed that he knew what the District needed. In spite of widespread criticism, the board refused to take decisive action against the District Engineer and Mr. Griffin remained on the payroll until he voluntarily resigned on June 10, 1912. It should be noted that subsequent events proved that Griffin was correct in his analysis of the needs of the District. A further bond issue of $610,000 had to be voted in March, 1914, to carry out some of the projects he had recommended.

Section 3

WATER TABLE PROBLEMS

As we have seen, irrigation is not all milk and honey. It does bring its attendant evils, one of the worst being a rising of the water table. Too much water can do about as much damage as too little. The soil can be saturated with groundwater. "Pore spaces in soils vary from a third to half its volume, but not more than one half of this pore space can be occupied by water for any considerable length of time without detriment to plant growth".[1]

In 1904, at the beginning of irrigation, the ground water level in the Modesto District was satisfactory,

1. State of California, Irrigation Requirements of California Lands, bulletin # 6, p. 21

ranging from 12 to 48 feet below the ground surface.[1] But the farmers of the District had actually wasted the suddenly abundant water. In fact for the first four years of irrigation the water used averaged about 10 feet in depth over the land irrigated, which was probably four times as much as was necessary.[2]

The history of irrigation districts proves that no irrigation project is permanent unless the ground water table can be controlled by proper drainage".[3] But early irrigators were making the history and could not anticipate the future. Water was given by the District and accepted by the farmers as much as was wanted. Before long, the water table was rising dangerously. As the water level came nearer the surface, thousands of dollars had to be spent in open and closed drains, both of which proved very expensive and did not solve the problem.[4] Despite these costly efforts, by 1919 nearly a third of the District (25,000 acres) was threatened by the rising water table.[5]

As early as April 2, 1907 the board had begun to realize the possibility of damage due to the rising ground-

1. State of California, Irrigation Requirements of California Lands, bulletin # 6, p. 47
2. Ibid.
3. Garrison, "Irrigation and Power", Union Pacific R. R., The Arrowhead Magazine, 1926, p. 11
4. Ibid.
5. Minutes of Board of Directors, VII, 310

water and on that day ordered a survey for drainage canals.[1] These drainage canals were meant to drain small lakes which received their water from the water table. These ditches were to drain into the rivers.

In the open ditches weeds, tules, willows and grasses grew up, choking the channel and slowing down, if not entirely stopping, the flow of water. Concrete pipes were also installed, but the roots and weeds even invaded the realm of these pipes. Cleaning was a constant problem to the board.[2] The concrete pipes were also exobitant in price.

Becoming desperate, the board began considering electric pumps as early as 1911. On June 24, 1911, the board authorized the installation of a power line to the Le Hane pumping plant. The Le Hane pumping plant helped greatly but eventually proved inadequate to control the rising water level. A report to the board in 1916 stated that the Le Hane pumping plant was either ineffecient or insufficient.[3]

Additional pumps were stationed at strategic points in the District. These pumps were an expensive necessity,

1. Minutes of Board of Directors, IV, 14
2. For instance a notation in the Minutes (VII,1) "ordered that the engineer do some work on the main drain canal below the concrete pipe section in the way of cleaning for temporary relief, as the tules and willow choke the flow of water from the pipe section causing it to back up and flow over the pipe".
3. Minutes of Board of Directors, IV, 442

but they had a two-fold value. First they kept the water table down and second they pumped the water back into the canals to be used again for irrigation.[1] This reuse of water helped to relieve the water shortage that was developing in the District.

In 1923 a bond issue was voted to install a complete system of pumps to cover the entire drainage area.[2] The hundreds of hosepower needed for the electric pumps were very costly. To save this money was one of the reasons that the board and the people made the decision to operate their own electric plant.[3]

Section 4

GENERAL ADVANCEMENT

Even before water had reached the canals of the District, a petition to include additional lands in the District, was presented to the board. This petition of March 3, 1903 was approved and accepted by the board.[4] And as soon as the value of irrigation was proven, almost everyone who could do so shifted from dry farming to irrigation. The area of land planted to grain fell from about 80,000 acres in 1900 to about 6,000 acres in 1920. Meanwhile, the irrigated areas increased from practically zero in 1900 to

1. Garrison, "Irrigation and Power", Union Pacific R. R., The Arrowhead Magazine, 1926, p. 12
2. Ibid.
3. Infra, p. 111
4. Minutes of Board of Directors, III, 100

more than 60,000 by about 1920.[1] Although irrigation hurt some crops, the farmers were quick to utilize crops that were more receptive to irrigation.[2] These farmers soon envisioned an unlimited market for all the fruit they could possibly raise.[3] The New York Sun was quite prophetic when it said, September 22, 1889, that "the California fruit business was comparatively in its infacy...and that its future growth...would be as startling as that of the last three years".[4] This increase had been ten fold in those three years.

It was obviously impossible for the owners of the big estates to cultivate intensively their large holdings. (This was before the tractors were invented and before there was an adequate supply of labor in California.) The large land owners decided to sell out to the small farmer in 20 or 40 acre plots for about $25 an acre. As early as 1901 A. F. Underwood, an anti-irrigationist who had been defeated for director, became so incensed at his defeat and the trend of events that he sold his landed holdings at $20 per acre.[5] But it was really about 1908 when most of the big land owners began to sell out.[6] Real

1. Elias, Stories of Stanislaus, 136
2. West, "Existing Irrigation Development in California", Commonwealth Club, XX, 374 ff. (Nov. 24, 1925)
3. Ibid.
4. Bancroft, History of California, VII, 743
5. Elias, op. cit., p. 95
6. Woehlke, "The Great Valley", Sunset, XXXIV, 290 (Feb. 1915)

estate men and land brokers became irrigation promoters and advertised all over the world for prospective settlers. This brought about a rapid colonization and development of the land which quadrupled the population and development of the county in twenty years.[1]

The development of the District may be illustrated by the following notations from the board minutes. On October 10, 1902 the board purchased a building from the Modesto Bank for $2,250.00 to be used for an office for the District.[2] October 9, 1911 the board decided to bring its mechanization up to date by the purchase of a 1912 "Overland" automobile for $1,050.00 and an "Excelsior" motorcycle for $240.00.[3] And on the same day the completed plans for a two story office building was approved by the board.[4]

In 1909 there was agitation among some of the taxpayers to eliminate the tax on improvements. Throughout the District from the beginning the taxes had been placed upon all lands within the District regardless of whether the irrigation waters were used or not. In the city of Modesto for instance, the consumers of domestic water bought water from the city or private interests. Yet they were expected

1. Associated Chambers of Commerce, Stanislaus County, 1937, p. 4
2. Minutes of Board of Directors, III, 74
3. Ibid., IV, 454
4. Ibid., p. 455

to pay the irrigation taxes, though they used no District irrigation water. It was felt that the city folks would progress right along with the farmers; that the farmer would do his trading with and purchasing from the city; and therefore, the city residences should furnish their share of the expenses of the District's works.

Gradually the city dwellers felt that they were bearing more than their share of the expenses. An owner of a $50,000 building on a lot that used no irrigation felt that he should not have to pay five times as much tax as a farmer whose 400 acre, $10,000 farm used irrigation water.

A special election was called by the board for January 8, 1910 to vote on exemption of improvements (houses, barns, stores, hotels, restaurants, etc.) for taxation purposes.[1] The result of this election was very close. 800 votes were cast (only the land owners were allowed to vote). In the two Modesto divisions exemption was voted 161 to 102 and 190 to 150. But the three rural divisions voted the proposal down 13 for, 31 against; 4 for, 26 against; 21 for and 93 against. This gave a total of 389 in favor of tax exemption on improvements and 411 votes against this exemption.[2]

On June 13, 1910 the board voted to relieve the taxpayers slightly by allowing the payment of the annual

1. Minutes of Board of Directors, IV, 242
2. Ibid. p. 253

taxes or assessments (except special assessments) in two instalments.[1]

This minor concession did not deter the proponents of change in the tax structure. A campaign of education or propaganda culminated in a petition to the board on April 10, 1911 to call another special election on the exemption of improvements. The board examined this petition, but, because only 250 citizens had signed the petition, the request for a special election was not granted.[2]

However a month later (May 9, 1911) the board on its own initiative did call for another special election on this question of the exemption of improvements on property.[3] The election was held on June 3, 1911, and this time the exemption of improvements won by the margin of 487 to 405.[4] Divisions 1, 2, 3, voted in favor of this exemption 43 to 28; 176 to 92; 243 to 144. Divisions 4 and 5 voted against the proposal 2 to 52 and 23 to 89.

The followers of the economic philosophy of Henry George were elated at this victory.[5] Here was an important trial of his philosophy. Whether or not the District officially follow the philosophy of Henry George is beside the point. The proponents of Henry George point

1. Minutes of Board of Directors, IV, 290
2. Ibid., p. 391
3. Ibid., p. 399
4. Ibid., p. 406
5. Young, Single Tax Movement in the United States, 208

to the District as an example of successful operation of that philosophy.

Another item of interest in the affairs of the District was the question of voting special assessments to raise money for ordinary upkeep of canals and other works of the District and for salaries of employees and directors. The board each year set a tax rate to cover the bonds and interest thereon due each fiscal year. In addition to this regular levy, a special election was called each year by the District to cover the other expenses of the District.

In 1910 the special election was called for $40,000 for canals and $20,000 for salaries.[1] This assessment was approved by the voters by a vote of 200 "yes" to 43 "no" votes.[2] This was safely beyond the two-thirds necessary for passage. The 1911 Special election for $85,000 ($24,00 for salaries, etc. and $61,000 for repairs and improvements was also approved by the voters 529 to 206 on August 10, 1911.[3]

But the board had underestimated its expenses or had over spent its budget. And so less than seven months later the board voted on a second special assessment of $20,300 for salaries and other expenses to complete the fiscal year. The irrigation laws provide that a four-fifths vote be had by the directors to levy a special assessment on the

1. Minutes of Board of Directors, IV, 297
2. Ibid., p. 301
3. Ibid., p. 432

District. Although the board voted on the assessment, the votes of George Covell and R. E. Gilman against the assessment defeated the will of the majority represented by Directors Frazine, Gilman and Wooten. So a special election was called by the board for March 20, 1912. The vote by the people was in favor of the assessment 549 to 505, but this was a long ways from the necessary two-thirds.[1] Only division 4 was opposed to the assessment but no division approved it by the necessary percent.

For a second time the board voted on the special assessment with the same result as noted above. The board again voted to call a special election on the same proposition for April 18, 1912. On this day the majority of the people again approved the assessment, this time 952 for and 641 against the assessment.[2] This was closer to the required two-thirds votes. Only division 1 approved it (by 121 to 29) by the required two-thirds, while division 4 was the only division against the special assessment.

To bring this stalemate to a conclusion, George Covell swung his vote to the majority. And on April 22, 1912 the board voted the special assessment (by now grown $500 to $20,800) four to one. J. B. Trask still voted "no".[3] The reason that Mr. Covell gave for changing his vote was that

1. Minutes of Board of Directors, V, 5
2. Ibid., p. 15
3. Ibid., p. 16

it was more important to pay the salaries of the employees, who could not afford to work for the District for nothing, than to stubbornly keep the money for improvements and maintenance from being spent by engineer Griffin.[1] Besides he was probably worried about the threat of Directors Frazine, Gilman, and Wooten to place a toll on the water users of the District in order to obtain the necessary funds.[2] This voting of tolls could have been authorized by a majority of the board. This would have helped the city dweller, but would have cost the farmer more.

On July 8th, 1912 another special election was held to provide $30,000 for salaries and $50,000 for the improvements and repair for the next fiscal year. A majority of the voters again voted for the assessment 303 to 256, but this again lacked the necessary two-thirds.[3] This time the board did not hesitate long. On August 14, 1912 it voted 4 to 1 for an assessment of $54,200.[4] Director Trask still voted against the assessment. Again the money ran out before the end of the fiscal year, so on March 10, 1913, the board voted another special levy of $75,000.[5]

The board called a special election for June 16, 1913 to vote on another special assessment of $75,000 for the next fiscal year. Surprising enough, the people of the

1. Minutes of Board of Directors, V, 17
2. Ibid.
3. Ibid., p. 55
4. Ibid., p. 63
5. Ibid., p. 157

District voted for this assessment 422 to 102.[1] This was more than 4 to 1, and well over the 2 to 1 vote required by law. Apparently the people realized the necessity of the work being done and the salaries being paid. Besides there was the constant probability of the board voting the same assessment or even placing a toll on the use of the water. The board might do this, despite a new procedure that had been introduced into the District politics.

This change that had come to the District was brought about by the state legislature which in 1911 had passed as an amendment to the state constitution that liberal measure, the recall. (All constitutional amendments in California must be voted upon by the people of the state.) The people approved the measure the same year.[2]

This right was given to the people to recall from office their elected (or appointed) officials. The people of the District were not slow in taking advantage of this privilege. Recall petitions were circulated against directors Trask, Gilman and Covell.[3] This petition was found to be legally in order and had to be approved by the board--this despite the fact that three out of five of the directors were up for recall. The date was set for the election for May 29, 1912.[4] This was one of the first uses of the

1. Minutes of Board of Directors, V, 202
2. Gray, History of California, 583
3. Minutes of Board of Directors, V, 17
4. Ibid., p. 18

recall in California. The result of this election was as follows: George Covell in division 3 "recall yes" 210, "recall no" 470; J. B. Trask "recall yes" 41, "recall no" 134; R. E. Gilman, division 5, "recall yes" 155, "recall no" 105.[1] Of the three directors up for recall only R. E. Gilman had been recalled. In his place was voted in a Mr. B. F. Anderson.[2] However the triumph of Mr. Anderson was short lived for he was recalled on November 20, 1913.[3]

Although Mr. George F. Covell escaped recall in 1912, he was again brought to the attention of the people by some of his antagonists. Mr. Covell was a stockholder of the Bank of Modesto. The District felt that it needed some gravel, but being short of ready cash, it decided to borrow the needed money from the Bank of Modesto. The interest charged was eight percent. The charge, then was that he had used the influence of his office of director to approve a loan at excessive interest from his bank to buy gravel that was "not to be used for a year or two".[4]

Upon petitions to the board by the citizens of the District, a recall election was set for November 20, 1913 for both George Covell and B. F. Anderson. George Covell was recalled by the vote of 90 to 77. Allen Talbot was

1. Minutes of Board of Directors, V, 31
2. Ibid., p. 32
3. Ibid., p. 291
4. Ibid., p. 275

elected to take Covell's office in division 3 and L. C. Gates was elected to take Anderson's place in division 5.[1]

Another attempt at recall was made on January 8, 1914 against John J. Tulley director of division 1. This recall election failed to get sufficient votes for recall, losing by a vote of 159 to 268.[2] Undaunted by this failure to recall in division 1, the voters of division 5 decided to circulate a petition for the recall of C. A. Hilton. This recall election was set for February 15, 1917.[3] This was an extremely close election. "Recall yes" received 183 votes which was topped by 185 votes against recall.[4] A recount of the ballots showed 190 votes against recall and 183 votes for recall.

That month must have been a good one for close elections. The week before, February 7, in division 4, J. B. Trask had defeated J. W. Frederick by a vote of 158 to 156.[5] The demand for a recount by Mr. Frederick was refused by the board.

In 1916 an agreement was entered into with the newly constituted Waterford Irrigation District to sell water to Waterford and for Waterford to use the main canal of the Modesto District.[6] This had brought a near rift between

1. Minutes of Board of Directors, V, 291
2. Ibid., p. 317
3. Ibid., VI, 442
4. Ibid., p. 457
5. Ibid., p. 446
6. Ibid., pp. 384-387

Modesto and Turlock over monies to be derived from the pending agreement with Waterford.

On April 6, 1917 the United States Government declared war on the Imperial Government of Germany. The District and the people of the District helped greatly in the war effort. As early as April 14, 1917 the State Council of Defense had decided to make a survey of the agricultural resources of the State.[1] The District helped as it could, but its real help had been in providing the needed water for the crops to back the motto "food will win the war". The war was won and the food situation of the nation was doubtless helped by the Modesto area. When victory came (November 11, 1918) it was on a day scheduled for a regular board meeting. The meeting was adjourned "and everybody proceeded to celebrate".[2]

The big problem almost constantly before the board, however, was the need for additional water. After the construction of La Grange Dam and the foothill reservoirs it had been the opinion of the would-be experts that these works would "give assurance of water in plenty even in the possible event of light snowfall, early melting, or any emergency".[3] But even as these words were being written, (about 1910) need for more water was rapidly approaching.

1. Minutes of Board of Directors, VI, 480
2. Ibid., VII, 182
3. Stanislaus Board of Trade, Modesto-Turlock Irrigation Districts, 4

On March 13, 1917 the neighboring Oakdale Irrigation District offered to send their waste water into the Modesto District canals. This was accepted by the Modesto board which naturally felt that was much better than wasting the water into Dry Creek (now Beard Brook) or the Stanislaus River. The amount of water was not to exceed 50 second feet and automatic gates to control this flow was to be installed.[1]

Every little bit helped, but this was not enough to relieve the District very much and so in 1919 the board of directors noted that "the great shortage of water during the finest growing period of the past three seasons with only three-fourths of the irrigable area of the District under irrigation proves the vital necessity for a longer period of flow, thereby demanding greater storage capacity than can possibly be had from our foothill reservoir".[2]

Incongruously as it seems, the very success of the District was leading it to great difficulties. In other words the District was outgrowing its own old tight, patched clothes. Drastic remedies were necessary and forthcoming as will be seen in the next chapter.

1. Minutes of Board of Directors, VI, 466
2. Ibid., VII, 273

Chapter V

CONSTRUCTION OF DON PEDRO DAM

Section 1

PRELIMINARY GROUNDWORK

Almost as soon as water from La Grange Dam started flowing through the canals to water the thirsty acres of Stanislaus county, foresighted people saw that further storage facilities would be needed. Simple arithmetic would show that if all the arable acres of the District were to be watered sufficiently during the late summer, greater storage capacity would be a prime essential. It was disturbing to watch the wasting flood waters in April, May or June after the La Grange and Dallas-Warner reservoirs were filled and then to be forced to watch the dry fields in August and September because these same reservoirs were nearly empty. Obviously another great mountain reservoir was needed to prolong the irrigation season.

As early as October 3, 1905 a committee of citizens asked the board to file for water on reservoir sites on the Tuolumne River water-shed.[1] This foresighted action is of course very commendable. Not only that but the board decided to act on the matter and by October 1, 1905 had filed for an additional 50,000 miners inches of water on the

1. Minutes of Board of Directors, III, 366

Tuolumne River to supplement the 225,000 inches applied for in 1890.[1]

The Turlock Irrigation District began investigation for more storage capacity on 1908. And in that year the Turlock District purchased 3,000 acres at Don Pedro Bar, a few miles above La Grange Dam on the same river.[2]

The Modesto board, not to be out-done by the Turlock board, voted on August 4, 1908 for a committee to inspect reservoir sites on August 10, 1908.[3] The surveys that the board had made previously in the mountains centered around two principal dam sites. These were the Lake Benson and the Hetch Hetchy sites. The board ordered surveys to determine the amounts of water flow to be expected in the headwaters around Lake Benson and Hetch Hetchy.[4] On October 8, 1910 both the Turlock and the Modesto boards met in an informal joint session for a discussion of the results of the surveys of Lake Benson and tributary streams of the Tuolumne River.[5] Little was done at the meeting, but the directors no doubt came from the meeting feeling that the headwaters of the Tuolumne River held the key to the future success of the districts.

1. Minutes of Board of Directors, XI, 43
2. Ibid., VII, 273
3. Ibid., IV, 93
4. Ibid., p. 311
5. Ibid., p. 321

Out of the various discussions that were held at various times came several plans for construction of dams. One plan that was presented involved the Yosemite Power Company. The Yosemite Power Company was the name of the merger of two power utilities, the La Grange Water and Power Company which furnished electrical power and water to residences and farms and a gold dredger near the town of La Grange, and the Tuolumne Light and Power Company which furnished electricity elsewhere around the Tuolumne River water-shed.

A proposition was suggested whereby the districts would cooperate with the Yosemite Power Company in constructing a dam above La Grange Dam.[1] On the surface this seemed like an excellent idea. The power company would put up the money it had planned for a dam for a hydro-electric plant. The districts would put up the money they would spend for a dam for irrigation projects. With that money a larger and better dam could be built, furnishing a greater power potential and also giving greater storage capacity than could be obtained without this cooperation. Or on the other hand the power company and the districts might put up only a part of the amount they had originally scheduled. Or a compromise could be worked somewhere in between the two extremes, i. e., a slightly larger and better dam at a saving in cost.

1. Minutes of Board of Directors, IV, 500

In the end, however, the joint boards decided not to deal with the Yosemite Power Company, but to construct their own dam. At the time this seemed a foolish thing to do, but the subsequent success of the public distribution system in both the Modesto and Turlock Districts showed the good judgment of the directors.

On April 27, 1912 the boards of the Modesto and Turlock Districts again met in joint session to protest against an order by the Secretary of the Interior to exclude reservoir sites from Yosemite National Park.[1] The obvious reason for changing the boundaries of the park so as to exclude the reservoir sites was to give private power companies the opportunity to acquire the dam sites for private development and exploitation. Secretary of the Interior Ballinger seemed more interested in giving private utilities a break than in preserving dam sites for the good of the public.[2] The districts were correct in objecting to this transfer, because any attempt by other interests to construct reservoirs in the upper reaches of the Tuolumne River might conflict with the more important job of supplying needed water to the farms.

When first figuring on a dam above the La Grange Dam the District could not very well plan on power development.

1. Minutes of Board of Directors, V, 20
2. Hicks, The American Nation, 426

The State Water Commission of California reported in 1912 that "because of lack of adequate stream flow data, no report on power resources can be presented. The gauging stations now being maintained...will within a few years afford all the data necessary".[1] By the time construction was ready to be begun on Don Pedro Dam this data was available and used by the District.

Gradually the boards decided against developing Lake Benson and in the meantime the City of San Francisco had acquired rights at Hetch Hetchy. Other likely available sites all seemed to be owned or controlled by other interests, leaving Don Pedro Bar the only site not so controlled.[2]

Realizing that any large diversion or storage dam would cost millions of dollars and realizing that, despite unprecedented prosperity for the Modesto and Turlock Districts, several millions of dollars worth of bonds would be a strain upon the financial resources of the districts, the boards tried to get the federal government to construct the Don Pedro reservoir.

This proposition was presented to the Committee on Appropriations of Congress on June 19, 1915.[3] The reason

1. State of California, Report State Water Commission, 1912, p. 43
2. Minutes of Board of Directors, VI, 123
3. Ibid.

for asking the government to handle the dam was that a $3,000,000 dam would actually cost about $6,000,000, including interest that would have to be paid on the bonds. The District had hoped that the dam could be paid for on the terms of the United States Reclamation Act which gave long terms for repayment and relatively low interest rates. This was not accepted. Later, on April 12, 1918, the Secretary of the Interior under Wilson was asked regarding particulars of government aid in the construction of large reservoirs.[1] But the government seemed more interested in the successful prosecution of the war (as well it might) so no financial help was given to the District at that time.

After much discussion in the following month regarding the construction of a dam, the joint boards met on December 15, 1915 and voted to construct Don Pedro Reservoir "at such future time as satisfactory arrangements can be made."[2]

In 1916 Turlock led the way by making successful application for use of various government lands above La Grange for reservoir purposes. During the next two years Turlock made preliminary surveys and investigations to determine the feasibility of building a dam at the Don Pedro Bar above La Grange.[3]

1. Minutes of Board of Directors, VI, 118
2. Ibid., p. 241
3. Vasche, Story of Our County, 98

Section 2

MODESTO AND TURLOCK JOINT ENTERPRISE

On February 18, 1918 the Turlock Irrigation District passed a resolution "notifying the Modesto Irrigation District that it wished said district to join with the Turlock Irrigation District in the expenses of an investigation of dam number 2 and the Don Pedro Reservoir".[1] As a result of this resolution, a letter was sent asking the cooperation of the Modesto board in the Don Pedro investigation. This letter reminded the District of the agreement with the Turlock District to help one another get water and reminded Modesto that according to the contract of August 9, 1890 the Modesto District must agree, within 60 days of written notice, to share in undertakings of the Turlock District. In addition the Turlock Irrigation District told Modesto that she was planning a bond issue and must know whether Modesto intended to help so she could know how large a bond issue to attempt.[2]

On the 27th of February the Modesto Board acted on this letter of request. A motion was introduced to back the Turlock Irrigation District in its Don Pedro survey and drillings. This motion was lost. C. A. Hilton and J. S. Tully voted for the motion. Negative votes were

1. Minutes of Board of Directors, VII, 93
2. Ibid., pp. 90-92

cast by Directors Talbot, Trask and Way.[1] The board added that it might desire "to share in the Don Pedro Reservoir at a later date in the event of an investigation proving that this Don Pedro Reservoir was a meritorious proposition in which the Modesto Irrigation District would be warranted in investing large sums of money.[2] This slowness to act was partly due to natural caution, partly due to contrariness.

A minor furor was stirred up in the District on account of the board's refusal to cooperate with Turlock. On the side of the board, the Hart local of the Farmers Union endorsed the action by the board of not cooperating with Turlock.[3] This group must have been receiving plenty of water and did not want the additional reservoir and its attendant increase in taxes.

On the other hand the Modesto Chamber of Commerce and Merchant's Association petitioned the board to rescind its refusal to cooperate with Turlock.[4] Director Talbot reported to the board that at a meeting in an auditorium on March 2, 1918 the Farmers Union were practically unanimous in asking the District to reconsider its action.[5] Due largely to the pressure of these groups, the board on

1. Minutes of Board of Directors, VII, 81
2. Ibid., p. 93
3. Ibid., p. 99
4. Ibid.
5. Ibid., p. 98

March 11, 1918, by a vote of four to one agreed to co-operate with Turlock on the project.[1]

In the year following, plans had progressed far enough so that by April, 1919 the boards filed for 325,000 acre feet of storage annually for power and irrigation.[2] Of this amount only 31.54% was for the Modesto District. The percentage was derived from the amount of acres in each District. A further request for 600,000 acre feet of water annually was requested but was not granted.[3]

The working agreement between the Modesto and Turlock Districts was signed on July 19, 1919. "The officials of the Turlock District transferred to the Modesto District 31.54% of all water rights, dam site, land, and privileges; the two districts again formed a partnership."[4] On February 23, 1920 the Modesto board elected officially to join with the Turlock Irrigation District in the construction of Don Pedro Dam.[5]

On April 12, 1918 at a joint session of both boards it was moved by Director Chance of the Turlock board and seconded by Director Talbot of the Modesto board "that the dam proposed to be built at the Don Pedro Bar on the Tuolumne River, be named and designated as Don Pedro Dam".[6]

1. Minutes of Board of Directors, VII, 99
2. Ibid., XI, 43
3. Ibid., VII, 289
4. Vasche, Story of Our County, 98
5. Minutes of Board of Directors, VII, 373
6. Ibid., p. 117

This was a logical name, for no individual had been particularly outstanding above his fellow men to deserve the honor of having the dam named after him.

On July 3, 1919 it was determined at a joint meeting that the dam should be of solid masonry and of a gravity type dam instead of a Jorgensen type dam that had originally been proposed.[1] On July 9, 1919 it was decided that either district could construct a power plant in connection with the dam by itself if the other district did not care to make a joint project of it.[2] A tentative estimate set the cost of the dam at about $3,750,000 and the cost of the proposed power plant development at $609,000.[3]

On July 24, 1919 the Modesto board decided to leave the issue of the power development up to the vote of the people. They decided to have a separate vote on bond issue for the dam and for the power development.[4] The amounts that each District was expected to raise was set at:[5]

Bonds for the dam

Modesto	$1,182,700
Turlock	2,567,300

Bonds for hydro-electric power plant

Modesto	$ 192,000
Turlock	417,000

1. Minutes of Board of Directors, VII, 258
2. Ibid., p. 265
3. Ibid., p. 266
4. Ibid., p. 267
5. Ibid.

To fulfill legal requirements, on January 12, 1920 a petition was presented to the board by Mr. O. F. Hardisty to ask the board for a special election for a $ 2,000,000 bond issue. A total of 1,315 names were enrolled on the petition. Of these names 722 were on the last assessment roll as property owners within the District. These names also represented more than the required 20% of the District. They represented $ 2,024,030 out of an assessed valuation of $ 6,945,970 or 29% of the District's assessed value.[1]

The Modesto board had not been content with merely asking for bonds for the new dam and the hydro-electric project. At the risk of a possible voter disgust with too many bond issues at once, five separate bond issues were put up to the people.[2]

1. Dam	$1,180,000
2. Power plant	181,600
3. Enlarging upper works and main canal	150,000
4. Drainage	190,000
5. Electrical transmission line and power substation	298,400
Total	$2,000,000

Obviously if the Don Pedro Dam issue was not approved there would be no sense in planning for the power plant or transmission line. Nor would there be much need for enlarging the upper works and main canal if there was to be

1. Minutes of Board of Directors, VII, 340, 341
2. Ibid., p. 348

no additional storage capacity in the form of a new dam. Nor, for that matter, would the drainage money be needed quite so badly if no additional water could be expected on the land. Thus basicly all the bond issues depended upon the approval of the dam issue. With that issue approved, it would be practically mandatory that the upper works be enlarged and that additional drainage facilities be installed. And of course who would want to see the electrical potential go to waste? The five bond issues were therefore tied together, albeit with various strength cords.

The election was held on February 17, 1920 and the result of the balloting was as follows:[1]

	Yes	No
1. Dam	1827	184
2. Power plant	1715	190
3. Main canal	1746	138
4. Drainage	1608	269
5. Transmission line	1646	219

Each of the five propositions passed easily so far as the entire District was concerned. But in division 4 the Dam lost by a vote of 43 "yes" to 75 "no", the Power plant lost 44 "yes" and 65 "no" votes.[2] The farmers in division 4 seemed to believe that increasing the size of the main canal and helping the drainage situation would cure their ills. The fact probably is that they were fairly well satisfied and were not greatly pinched for want of water.

1. Minutes of Board of Directors, VII, 366
2. Ibid.

A quick review of the vote results would indicate that the electorate voted intelligently. The project that seemed the least connected with the dam received the least support. The vote on the dam, around which all other propositions circled, was both the heaviest and the most favorable.

The overwhelming vote of the people on these bond issues gave impetus to the District directors to proceed with their plans and specification. Throughout most of the balance of the year 1920 the joint boards worked over plans and on December 29, 1920 final plans and specifications for for Don Pedro Dam were accepted.[1]

Bids were advertised and on February 24, 1921 bids were opened. The engineers had estimated a cost of $3,723,598. The two districts had voted a total of $3,750,000 in bonds. But the bids were $4,098,530 by R. C. Storrie and Company and $4,127,780 by the Utah Construction Company.[2] The bids were rejected and the boards ordered readvertisement.

On March 7, 1921 the second proposals were opened by the boards. Ten firms submitted a total of thirteen bids all of which were on some form of cost plus basis.[3] These cost plus bids had been very popular during the war. But after the war was over there was little excuse for the cost

1. Minutes of Board of Directors, VIII, 27
2. Ibid., p. 68
3. Ibid., p. 74

plus contract, except for the protection for the contractor in case wages and other costs reach an inflation state. In 1921 the inflation stage had already begun to collapse. In theory, then, the cost plus contract should have saved the districts much money. But the cost plus system would put a premium on padding the payrolls and deliberately adding to the cost of construction in order to add to the profits of the contractors.

The board of engineers of the Turlock and Modesto boards made a report on the thirteen proposals and made three suggestions from which the joint boards could take their choice.

1. Accept one of the cost plus terms.
2. Readvertise for more bids. (This would likely delay the dam construction over one full irrigation season).
3. Do the work under the boards' own superintendence.[1]

On March 9, 1921 the joint board voted not to readvertise for bids "at the present".[2] And on the following day, March 10, a resolution was adopted by the joint board to have the work done under their own superintendency.[3] The Modesto and Turlock boards met independently the following day to approve officially the action of the joint board. (They had made a sort of gentleman's agreement that anything

1. Minutes of Board of Directors, VIII, 74
2. Ibid., p. 81
3. Ibid., p. 83

voted at the joint meetings would be ratified by the individual boards later.) The Modesto board voted to accept the proposal to have the work done under their own superintendence by the narrow vote of 3 to 2. Directors Coffee, Guyler and Morris voted "aye" while Directors Hilton and Routh voted "no".[1]

On April 26, 1921 engineer D. H. Duncan communicated with the board and offered his services at $1,000 per month in the construction of Don Pedro Dam.[2] His proposal was accepted and the board ordered that work be begun under their own superintendence as soon as possible.

When Don Pedro Dam was obviously going to be built there was some protest from various people regarding the cemetary that would be flooded as the waters formed a lake behind the dam.[3] Obviously the dead in the cemetary must not be allowed to hold up progress for the living. The boards allowed a short time for the removal by interested persons of the dead from the cemetary.[4] Some people no doubt felt that it would not be fair to the deceased to get such a wet welcome on Judgment Day.

1. Minutes of Board of Directors, VIII, 83
2. Ibid., p. 126
3. Ibid., p. 298
4. Ibid., p. 332

Section 4

THE CONSTRUCTION OF DON PEDRO DAM

Primary construction on the dam began in May 1921.[1] Before work progressed very far plans were made for taking care of the hundreds of workers who were expected on the job. The boards decided to help the workers in every way possible. A mess hall was built. A hospital also was constructed and an up-to-date X-ray machine was voted for the hospital. A doctor and nurse were also provided. Through arrangements with the Tuolumne County Superintendent of Schools, a school was provided for the children of the workers. The districts were to furnish the building for the school and Tuolumne County was to furnish the teacher. In addition, before much heavy equipment could be brought to the dam site, a spur line of the Sierra Railroad had to be constructed.

One good break that the districts received from nature was the fact that "actual drilling in order to ascertain the character of the foundation found that the river bed rested upon hard blue flint rock for about 200 feet into the earth from the surface of the bed of the river".[2] Therefore there was no need for excavations, thus saving thousands of dollars for the District.

1. Wegmann, Design and Construction of Dams, 639
2. Elias, Stories of Stanislaus, 139

During the winter of 1921-1922 work on the dam was delayed due to the soggy road bed of the Sierra Railroad.[1] This delay was not too costly, especially in relation to the delays that had faced La Grange Dam. During the spring and summer of 1922 work progressed according to schedule and about as fast as could be hoped for.

Finally on November 21, 1922 it was announced that water was beginning to be stored behind Don Pedro Dam.[2] The sweat, cash, and hopes of the farmers were beginning to pay off. And on April 1, 1923 Percy F. Jones of the Modesto District was able to announce to the board that the dam and power house were completed.[3]

However at the insistance and suggestion of the engineers in charge of construction additional work was ordered on the dam. The additional work was to cost an extra $307,000 (of which Modesto was to pay $96,800).[4] This would require an additional $75,000 bond issue according to engineer Jones.[5] The additional work was completed in May, 1923.[6] The dedication ceremonies were set for June 25.[7]

1. Minutes of Board of Directors, VIII, 346
2. Ibid., p. 447
3. Ibid., IX, 69
4. Ibid., p. 69
5. Ibid., p. 70
6. Wegmann, Design and Construction of Dams, 639
7. Modesto Irrigation District, (General Information) 1938, under "Don Pedro Dam", (no number)

Don Pedro Dam, when completed, was the highest dam in the world above its stream bed.[1] The original specifications had called for 279 feet above the river bed, to hold 260,000 acre feet of water which was to cover about 3086 acres.[2] But the engineers had decided to enlarge the dam slightly. The dam as built rises 283 feet above the stream bed. It is 177 feet thick at the base, 16 feet thick and 1020 feet long at its top, and is estimated to contain 265,000 cubic yards of masonry.[3] The dam is built in a long curve with the convex side upstream. It forms a lake on the Tuolumne River three miles wide by fourteen miles long and impounds approximately 300,000 acre feet of water.[4]

The estimated cost of the dam itself including the additions was about $3,724,000.[5] The total cost including the power plant was $4,864,824.34 of which Modesto paid 31.54% and Turlock 68.46%.[6] This cost was probably much less than it would have been under any of the cost plus contracts. And the result was one of the "finest dams ever built".[7]

1. Elias, Stories of Stanislaus, 139
2. Minutes of Board of Directors, VII, 274
3. Elias, op. cit., p. 139
4. Garrison, "Irrigation and Power", Union Pacific R. R. The Arrowhead Magazine, (1926) p. 11
5. Elias, op. cit., p. 139
6. Modesto Irrigation District, (General Information) p. 1
7. Vasche, Story of Our County, 98

Chapter VI

BEGINNING OF POWER PRODUCTION

Section 1

DECISION TO DISTRIBUTE OWN POWER

The people of the Modesto area were aware of potentialities of power development along with their irrigation works. They showed this by approving bonds for the construction of the hydro-electric plant in connection with Don Pedro Dam.[1] They were also aware of the conflict which is sure to arise where the same water is wanted for both irrigation and power production. To turn the turbines for electrical energy, water must flow all year, but for irrigation purposes the water is needed for only about half the year.

But the temptation to utilize the power was too great to be denied and filing for water for power purposes was made April 8, 1919 for 325,000 acre feet or water by the Turlock District.[2] Modesto was to receive 31. 54% of this amount. On December 19, 1921 the bonds were voted for the construction of a power house at the Don Pedro Dam.[3] The next month, January 14, 1922, the board voted to hire Louis F. Leurey for $2,700 to study the possibilities of power revenue on both a wholesale and retail basis.[4] At

1. Supra, p. 101 also infra, p. 111
2. Minutes of Board of Directors, XI, 43
3. Ibid., VIII, 271
4. Ibid., p. 295

that time the use of electrical energy in Modesto was estimated at between 700 and 2000 kilowatt hours per month.[1]

Engineer Wiley had previously reported that the water would generate 16,000 horse power of energy for nine months from January through September, but that in the three months from October through December only 1000 horsepower could be figured on from the water the District owned and controlled. But he added that the Hetch Hetchy water would be flowing in the River at all seasons to bring the horsepower up to 5,000 from October through December.[2]

Not the least of the reasons for encouraging a local electrical distribution system was that this would be a local industry employing many local people and would keep any profits at home.[3] The report of the power engineers was made July 13, 1922 and indicted that the probable annual generation of power would average 90,000,000 k.w.h. Of this amount 10,000,000 would have to go to the Pacific Gas and Electric Company.[4] Turlock would receive about 53,000,000 k.w.h., leaving a maximum of about 27,000,000 annually for the Modesto District.[5] On the basis of the rates charged by the Pacific Gas and Electric Company at .03 per k.w.h. it was expected that the gross income from power would be about $360,000 per year when fully

1. Minutes of Board of Directors, VIII, 295
2. Ibid., VII, 310
3. Ibid., X, 68
4. Infra, p. 135
5. Minutes of Board of Directors, VIII, 382

utilized.[1] This sounded like a lot of profit until it was realized that a complete distribution system (as estimated by Percy Jones, Chief Engineer) would cost $1,163,000.[2] The District had available slightly less than $300,000 that had been voted for distribution expenses in the 1921 election, leaving a $863,700 bond issue still needed.[3]

On the basis of preliminary estimates of the cost, the Modesto board on June 14, 1922 decided that wholesaling of the Don Pedro power was at that time best, but that this would not exceed five years. The main reasons for deciding on wholesaling were as follows:

1. The board's use (mostly by electric pumps for keeping down the water table) would not exceed more than one-third of the power that would be available.

2. There is no definite guaranteed (retail) outlet for the other two thirds.

3. The District should not be bonded an additional $1,000,000 for distribution lines or the board should not condemn the Pacific Gas and Electric Company's lines.

4. If distribution is attempted, a year's loss in time would result; the board can wholesale as soon as the dam is completed.

5. Engineers advise that more money would be available wholesale than retail, at the present time.

6. Many of the largest power users are under long term contract with the Pacific Gas and Electric Company.

1. Minutes of Board of Directors, VIII, 387
2. Ibid., p. 385
3. Ibid.

7. The District is already bonded to the extent of $4,000,000 and that the District may not be able to refund again; that running expenses of $500,000 a year are expected soon.

The vote on this decision not to retail power was four to one. J. R. Broughton, H. J. Coffee, H. W. Guyler, C. A. Hilton voted for this decision. E. L. Routh voted against this decision and therefore in favor of retail distribution.[1]

However this decision by the board was certainly premature! Previously the board had called a special advisory election on the same proposition. And a week after the board made its decision not to retail power, the people vetoed the board's ruling. This election was held June 21, 1922 and the result was as follows:[2]

For retail distribution	1468
For wholesale	605
For further bonds	1397
Against further bonds	486

Actually a higher percent of voters voted for additional bonds than voted in favor of retail distribution. In both cases the votes were about two and a half to one. The board thereupon reversed itself and began favoring the retail distribution of its power and later even voted to instruct the superintendent to discharge immediately any employee who was opposed to distribution and who did not cooperate with the directors' policy.[3]

1. Minutes of Board of Directors, VII, 369, 370
2. Ibid., p. 373
3. Ibid., IX, 218

The philosophy behind the decision to distribute their own power is indicated by the following:

> The power crop is a natural by-product of the stored water, and to sell that crop at a small wholesale price and turn around and buy it back at a much higher price for drainage and other uses did not seem any better logic than to raise a crop of corn, sell it at a low price, then buy the corn at retail prices to feed our hogs.[1]

On January 23, 1923 the board decided to conduct an informal straw ballot on whether the people would support the District if it did enter the field of retail distribution. It voted to put a questionaire coupon in the two daily papers (the Evening News) and the Morning Herald) asking if the people would buy electric power from the Modesto Irrigation District.[2] Apparently the straw ballots indicated the willingness of the people to patronize themselves, for work was speeded toward completion of the retail distribution system.

By October 1923 the distribution system was nearly completed in some areas. The engineers recommended five rate classifications for electrical power. These proposals were for reductions from the then current Pacific Gas and Electric Company rates and would have been about 10% less for lighting, 25% less for combined lighting and heating and a 10% reduction on power service.[3]

1. Garrison, "Irrigation and Power", Union Pacific R.R., The Arrowhead Magazine, 1926, 12
2. Minutes of Board of Directors, VIII, 482
3. Ibid., IX, 216

However this proposal by the engineers was rejected by the board. Director Lambert suggested rates that would give a minimum profit for cooking and heating and for power purposes for private pumping or drainage; that the other rates were to be the same as the Pacific Gas and Electric Company rates.[1] This proposal was passed unanimously by the board and the engineers went back to work to set rates accordingly.

The electrical rates were adopted November 19, 1923.[2] For general service for residences the rates were as follows:[3]

	town	rural
Minimum of 10 k.w.h.	$ 1.00	$ 1.25
11 - 50 k.w.h.	.06	.07
51 - 200	.05	.06
201 - 1000	.04	.05
1001 - 3000	.03	.04
All over 3000	.025	.035

This obvious differential in favor of the city consumer was given for several reasons. First the city consumers were closer together making a smaller cost per meter installed so far as poles and lines were concerned; second, meter readers could cover more customers in the town, making billing cheaper; third the rural users might be expected to use a larger amount of electricity than the average town dweller, therefore he should be given advantage in electrical rates.

1. Minutes of Board of Directors, IX, 216
2. Ibid., p. 274
3. Ibid., p. 264

On October 23, 1923, the first meter was set in Modesto.[1] On October 27 the first trial distribution of energy was begun.[2] However it was not until November 12, 1923 that the regular distribution of power from Don Pedro Dam began in Modesto.[3] This day was set for observance of the fifth aniversary of the Armistice ending World War I. (November 11 fell on Sunday that year.)

Having started the distribution of power the board decided that they might as well finish the job. They found that, to cover the district adequately, the following additional expenses would occur:[4]

Rural	
lines	$ 330,000
substations	7,800
Towns	
Empire	8,000
Salida	4,500
Modesto	225,000
Modesto substation	45,800
Standby from Hetch Hetchy	50,000
Tie lines	15,000
Transportation	11,200
	$ 697,300

However the District had available $77,300 in materials and $120,000 in cash. Subtracting this $197,300 from the gross cost gave a difference of $500,000 to be met by

1. Minutes of Board of Directors, X, 68
2. Ibid., p. 175
3. Ibid., IX,238
4. Ibid., p. 222

a bond issue. The reason for the reduction in anticipated costs over the previous estimate was because of the falling prices due to the depression following World War I.[1]

On November 19, 1923 the petition from the citizens requesting the $500,000 bond issue was heard by the board.[2] Thereupon the board set December 17, 1923 as the date of the election. The result was an overwhelming affirmative vote of 1,282 "yes" to 121 "no" votes.[3] Bids for the competion of the system were rejected and on February 5, 1924 the board ordered the system to be completed under their own superintendence.[4]

We cannot leave this part of the study without noting how officially the City of Modesto helped the Modesto Irrigation District. As early as August 21, 1922 the mayor (Sol P. Elias, whose book, Stories of Stanislaus, has been quoted extensively in this work) and city council met with the board and offered to assist and cooperate with the District in disposal of electrical power.[5] On July 18, 1923 the board petitioned to the City of Modesto for a permit to build transmission lines on streets and alleys.[6] This was approved August 1, 1923.[7]

1. Supra, p. 110
2. Minutes of Board of Directors, IX, 254
3. Ibid., p. 287
4. Ibid., p. 338
5. Ibid., VIII, 401
6. Ibid., IX, 141
7. Ibid., p. 163

However the relations between the city and the District were not one way only. The District offered the city special rates for pumping water.[1] (Modesto owns and operates her own city water utility). In November 1924 the rate on city street lights in Modesto was set at $.015 per k.w.h. with a minimum charge of $3,500 per year.[2] Also an underground distribution system had been planned for uptown Modesto and $81,000 had been voted for that purpose. However the underground construction was too slow and materials were not available.[3]

The city school board also helped the District at first. The District engineers had recommended a special rate for heating of school buildings.[4] The school board later, November 7, 1923, approved the special rates and adopted electric heating for the city schools.[5]

As early as September 15, 1923 (more than two months before electrical energy was distributed in the system) the West Stanislaus Irrigation Disteict wanted an agreement for the purchase of power from the Modesto Irrigation District.[6] Modesto decided to build transmission lines to the boundary between the two Districts (the San Joaquin River). Begin-

1. Minutes of Board of Directors, IX, 230
2. Ibid., p. 486
3. Ibid., X, 175
4. Ibid., IX, 43
5. Ibid., p. 244
6. Ibid., p. 189

ning on June 25, 1924 the District began selling wholesale power at .004 to the Turlock Irrigation District.[1]

The District decided early that the best way to build up a big retail business was to encourage people to buy and use more electrical appliances. To this end the District decided to go into the electrical appliance business. The board recommended that socket appliances, cleaners, washers, etc. should be handled at the District store and that a competent salesman be employed to push the sales of this department.[2] Electric ranges and other applicances were bought in wholesale lots at wholesale prices. Some of these ranges were rewholesaled to furniture and hardware stores who agreed to push the sale of these goods.[3]

For about ten years the District competed in this field with the appliance stores in Modesto. The store usually managed to show a profit for the month, but even if a small loss had resulted (which sometimes happened) the District would have been ahead because of increased business in its retailing of electrical energy. However, as a result of hard time after 1929, local merchants who handled similar types of equipment objected strongly to the District's competition. So on February 14, 1933 the District abandoned

1. Minutes of Board of Directors, IX, 421
2. Ibid., X, 71
3. Ibid., p. 97

selling electrical appliances direct. The merchants on their part agreed to advertise electric goods.[1]

Somewhat like the dissolute bartender who became his own best customer, the District was its own best customer. In April 1923 it was proposed that 26 electric pumps be used to keep the water table level down to prevent damage to the growing plants.[2] The District claimed to have "completely solved"[3] the drainage problem by using the energy derived from the waters coming to the land to pump the water back into the ditches for reuse for irrigation purposes.[4]

Even with much electrical energy going into pumping plants to control the ground water level, the District, in the first 16 months of operation of its distribution system, showed a net profit of 8.26 percent.[5] This profit was more than the District had figured on making and so a study was made of the rates charged.

It was found that the Modesto Irrigation District rates were higher than other publicly owned utilities, including the Turlock District.[6] The District obviously had two choices. One was to reduce the electric rates charged, the second was to accumulate more money and reduce the tax rate.

1. Minutes of Board of Director, XIII, 225
2. Ibid., IX, 71
3. Ibid., I, 68
4. Supra, p. 77
5. Garrison, "Irrigation and Power", Union Pacific R. R., The Arrowhead Magazine, 1926, p. 12
6. Minutes of Board of Directors, X, 69

For various reasons the board chose the first alternative. For one thing reduction in rates would tempt consumers who were not interested in lower taxes to "come over to" the District from the Company lines. Second, lower rates would bring a larger volume of business from present users. Third, the capacity of the generators as of April 1925 were 4,750 k.w.h. and the peak load had not exceeded 2,200 k.w.h.[1] And the District of course got more money from retail sales than from selling wholesale to the Pacific Gas and Electric Company. Fourth, the "city residences who pay taxes but receive no irrigation water should have a reduction in electric rates."[2] Fifth, more industries would be attracted to the Modesto area.

At this time the board made the prediction, as yet not quite fulfilled, that "there is no question but that it is only a matter of a few years until the revenue from our power will eliminate the irrigation tax".[3]

To further build up retail business the board resolved to take the $50,000 in bonds voted for Hetch Hetchy standby service, which had not been needed and put the money into an extension of the distribution system.[4] This transfer was approved by the California Bond Certification Commission.

1. Minutes of Board of Director, X, 69
2. Ibid., p. 70
3. Ibid.
4. Ibid., IX, 452

By this time the retail business was reaching close to the maximum available kilowatts from the Don Pedro generators. Even as early as April 24, 1924 it was foreseen that standby electrical plants were needed. Diesel engines and steam turbines were suggested to generate electricity if the water flow in the late fall should be too little to generate the required energy.[1]

The board knew that by the fall of 1924 (an extremely dry year) they would need desperately some auxiliary plant and so they leased a 1250 watt steam standby plant belonging to a Mr. L. D. Armstrong.[2] A protest against this steam generator came from L. L. Dennett, formerly an attorney for the District and later a mayor of Modesto, and B. H. High who claimed that it would be a public nuisance.[3] In deference to this protest, on May 20, 1924, the steam generater plant was moved from the city to the country where less damage would be caused in case of steam explosion.[4] In relation to this dry year of 1924, it might be well to mention that the Waterford Irrigation District gave water for power purposes to the Modesto District beginning September 16, 1924.[5]

1. Minutes of Board of Directors, IX, 389
2. Ibid., p. 392
3. Ibid.
4. Ibid., p. 403
5. Ibid., p. 470

Obviously the little steam plant and the small amount of water for power purposes that Waterford might sell or give, would not be enough to help the District if it kept growing. And grow it did. By March 1, 1925, 5,772 meters had been set.[1] From that time on, the need for standby and additional power became more pressing.

On July 30, 1926 a special meeting was called for considering auxiliary electric power.[2] On April 25, 1929 it was voted to approve and accept diesel engine electric generating plants.[3] Natural gas was considered for generating electric power by a joint meeting of the Modesto and Turlock boards on October 31, 1933. This natural gas was located by the Osterberg brothers along the Tuolumne River a couple of miles east of Modesto. It seems peculiar that an irrigation district would be negotiating for or considering diesel engines and natural gas to generate electricity to sell to the public. But that is the history of the development of the District.

Along with this need for additional standby power came the need to increase the power units at Don Pedro Dam for emergency purposes. Supposing something should go wrong with one of the turbines at Don Pedro, the Districts would be in pretty bad shape. Besides eventually repairs and re-

1. Minutes of Board of Directors, IX, 470
2. Ibid., p. 300
3. Ibid., XIII, 363

placements would be required for the old generators. There would be times when these generators would need to be idle. So on June 18, 1926 it was decided to install two 7,500 watt generators in addition to those already installed.[1]

December 4, 1924 a bond election for $236,000 (Modesto's share of the new generating unit) was held. The result was another overwhelming victory for the voting of bonds. Not one of the five divisions opposed the bonds, nor was the vote close in any division. The bonds "yes" received a total of 1,194 votes. Bonds "no" received a meager 79 votes.[2] This was a ratio of slightly better than 15 to 1.

Section 2

COMPETITION WITH SAN FRANCISCO

The competition with San Francisco is distantly related to the competition with the Pacific Gas and Electric Company. The City of San Francisco acquired dam sites and water rights, then sold the energy derived therefrom to the Pacific Gas and Electric Company. It is true that the electricity was supposed to be retailed to the people of San Francisco. But once electricity enters the lines of an interconnected system it somewhat loses its identity. But particularly, the profits made on the San Fransicso deal

1. Minutes of Board of Directors, X, 284
2. Ibid., p. 389

could be balanced against any loss suffered in attempting to undersell the Modesto District.[1]

Originally the quarrel with San Francisco was not regarding power but was solely regarding water rights. As early as June 2, 1903 the city of San Francisco tried to get storage reservoirs on the upper Tuolumne River (in Yosemite National Park). The board instructed its attorneys to protect the interest of the District in the matter.[2]

However San Francisco felt that she needed a new supply of drinking water for her hundreds of thousands of people. They were willing to negotiate with the irrigation districts and come to an understanding or compromise dividing up the waters of the Tuolumne River between San Francisco and the districts.

On April 5, 1904 the San Francisco attorneys offered to meet with the Modesto and Turlock Irrigation Districts to secure united action in obtaining passage of a bill in the United States Congress granting San Francisco the use of storage reservoir sites in the government reservations on the Tuolumne River.[3] This meeting was opposed by Ora McHenry, one of the pro-irrigation farmers. Despite this protest, the board granted to the San Francisco committee the right to attend board meetings.[4]

1. Infra, p. 143
2. Minutes of Board of Directors, III, 136
3. Ibid., p. 232
4. Ibid., p. 233

On June 14, 1904 the board sent a petition to the Secretary of the Interior asking that a permit not be granted for any filings for reservoir or dam sites until adequate provisions could be made for irrigation use.[1]

On August 6, 1904 a conference with the San Francisco officials was declined by the Modesto board on the grounds that the districts needed all the water possible for irrigation.[2]

Shortly however the application from the city of San Francisco for water storage at Hetch Hetch and Lake Eleanor on the Tuolumne River was reopened by the federal government. This time the famous Garfield Grant gave to the city of San Francisco water rights on the Tuolumne River.[3] In protest against this grant the board on October 1, 1912 asked the Secretary of the Interior to visit the districts regarding the controversy with San Francisco over Hetch Hetchy.[4] However the Secretary did not find time to accept the invitation.

Modesto became quite alarmed over the possibility of the removal of water from the Tuolumne River by San Francisco. San Francisco was to receive 400,000,000 gallons of water daily.[5] Modesto's protests to Washington brought

1. Minutes of Boards of Directors, III, 246
2. Ibid., p. 252
3. Ibid., V, 22
4. Ibid., p. 86
5. Ibid., p. 293

forth promises of an oral hearing on the matter in Washington, D.C. on November 25, 1912.[1] The Modesto board hired Luther Wagoner of San Francisco for $2,500 to represent the District in Washington.[2]

Assemblyman J. C. Needham reported to the board that the fifty-third congress was to vote on the Hetch Hetchy matter on June 10, 1913. Assemblyman Needham and Attorney R. Jones were given authority to make a settlement of the Hetch Hetchy controversy pending in Congress.[3]

The result of the congressional debates was the passage of the now famous Raker Act. This Act gave to the city of San Francisco the 400,000,000 gallons of water she wanted plus rights to power. There were a number of strings attached to this grant. For instance section 6 states that San Francisco "is prohibited from selling or letting to any corporation or individual, except a municipality or municipal water district, or irrigation district, the right to sell or sublet the water or the electric energy."[4] Also the city of San Francisco would have to sell water to Modesto in dry years upon demand.

The Modesto and Turlock boards met in joint session on August 13, 1913. They discussed the passage of the Raker

1. Minutes of Board of Directors, V, 94
2. Ibid., p. 100
3. Ibid., p. 191
4. Ibid., XIV, 341, 342

Act and agreed that it protected the Districts to some extent. They then approved the Raker Act as the "best that could be done owing to the conditions existing in Washington".[1]

But Modesto did not give up the fight. On November 25, 1913 the Raker Act was protested before the United States Senate. They claimed that the 400,000,000 gallons daily take would not leave the districts enough storage water for at least half of the irrigation season. They made the proposal that "if the Hetch Hetchy is to be given away, the Modesto Irrigation District will gladly take it and construct the necessary dam and public roads as required by Congress".[2] Modesto maintained that she needed 2,000 cubic feet of water per second.[3]

However Modesto was not selfish. She instructed the engineer to cooperate with the San Francisco engineers in gathering facts regarding snowfall, stream flow, water needs for the valley, storage possibilities, etc.[4]

San Francisco on her part was also willing to be reasonable in the matter. San Francisco was to buy the Spring Valley Water Company whose source of water was near San

1. Minutes of Board of Directors, V, 230
2. Ibid., p. 293
3. Ibid., VI, 29
4. Ibid., p. 80

Francisco. Both Modesto and Turlock thereupon informed San Francisco that she was expected to use existing supplies thoroughly before using the Hetch Hetchy source.[1]

On October 27, 1915 San Francisco decided to issue $40,000,000 in bonds for the construction of Hetch Hetchy Reservoir.[2] As might have been expected Modesto protested this action. Opposition to spending millions for Hetch Hetchy came from some San Francisco citizens. Suit was brought by these citizens to prevent a bond issue that had been voted for a dam at Lake Eleanor from being used to construct Hetch Hetchy Dam. On August 18, 1919 the Modesto board voted to back these dissident citizens.

About this time the shortage of water for late irrigation was becoming acute in the Modesto and Turlock Districts. It was determined that more storage space was necessary for the success of the District. And so the Modesto District completely reversed itself and decided, on December 29, 1919, to apply to the State Water Commission to store 120,000 acre feet in Hetch Hetchy Reservoir and to join the city and county of San Francisco in building the Hetch Hetchy Dam and to extend the dam to its full height in order to store this additional water.[3]

1. Minutes of Board of Directors, VI, 88
2. Ibid., p. 199
3. Ibid., VII, 335

This reversal did not change the attitude of the board towards the withdrawal of water from the Tuolumne River, because on February 20, 1920 suit was brought against San Francisco to prevent storing of water in Lake Eleanor.[1]

Cooperation was possible between the two contenders on other problems. For instance while the Districts were building Don Pedro Dam, it was found that certain rights belonging to San Francisco would be damaged by creation of the lake behind the dam. Neither San Francisco nor the Districts could exercise the right of eminent domain over the other, so mutual easements were agreed upon.[2]

As a further concession San Francisco agreed to furnish Modesto with standby electric service.[3] This was one of their obligations under the Raker Act. On May 29, 1923 San Francisco approved a resolution granting this service to Modesto.[4]

Modesto was pretty provoked in 1924 when, between October 28 and November 18, San Francisco interrupted the normal flow of water by storing 8,500 acre feet of water in Lake Eleanor and 11,000 acre feet in Hetch Hetchy Reservoir.[5] It made little or no difference to the irrigators,

1. Minutes of Board of Directors, VII, 355
2. Ibid., VIII, 350-355
3. Infra, p. 132
4. Minutes of Board of Directors, IX, 98
5. Ibid., X, 10

because it was past the irrigation season before this storage was begun. It would have been extremely costly to many farmers if this withdrawal had occured in June, July or August.

1929 was a year of low water. Despite economies in the distribution of water, the late season seemed to promise only drought. So the board called upon San Francisco to sell water held in Hetch Hetchy Reservoir. During August and September 46,000 acre feet were called for by Modesto.[1]

Later the city and county of San Francisco were able to reverse the tables on the Districts. In August of 1931 San Francisco protested against the Districts' application for appropriation of water from the Middle and South Forks of the Tuolumne River and Big Creek.[2] The shoe was now on the other foot and San Francisco was worried about feeling the pinch.

To counteract this move, San Francisco asked for permission to raise Hetch Hetchy Dam an additional 85 feet. This move was opposed by the Modesto District and the citizens of the area. The board made a resolution to "press the suit now pending".[3] A few years later the board again reversed itself in a request to the El Solyo Ranch (a large riparian owner on the west bank of the San Joaquin

1. Minutes of Board of Directors, XI, 485
2. Ibid., XII, 442
3. Ibid., XIII, 355

River below the mouth of the Tuolumne River) to reconsider its refusal to allow San Francisco to store more water at Hetch Hetchy in 1939.[1] The reason for this reversal was that the board felt it might be able to buy some of the stored water in case of need. An additional 135,000 acre feet capacity was available at Hetch Hetchy. Temporarily, in 1939 the District and San Francisco had gotten together, but with the understanding that this agreement was not in any way to affect the previously claimed rights of either party.[2] In accordance with the last agreement with San Francisco, the Modesto District protested "any possible closing down of the Moccasin Creek Power plant".[3]

It is now evident that the building of great storage reservoirs on the Tuolumne River above Don Pedro has helped the Districts rather than hurt them. The District has admitted, through letter from C. E. Plummer, Chief Engineer, on October 30, 1944, that the San Francisco Dams have helped the Districts in their storage problems.[4]

In the years since 1925 it has been not the storage problem that bothered the District quite so much as the electrical problem. In that year the District protested that the sale of power to the Pacific Gas and Electric Company was violating section 6 of the Raker Act.[5] A tele-

1. Minutes of Board of Directors, XX, 137
2. Ibid., p. 195
3. Ibid., XXII, 71
4. Ibid., XXVI, 281
5. Ibid., X, 119; supra p. 125

gram was sent to President Coolidge requesting the Secretary of the Interior to remind San Francisco that it was violating law and the Raker Act.[1] But this was during an administration when private enterprize was stressed, so nothing was done by the government.

Even when Franklin Delano Roosevelt became President and Harold Ickes became Secretary of the Interior, nothing was done about this violation of the Raker Act provisions. It is true that Mr. Ickes tried to get San Francisco to live up to the Raker Act, but the people of San Francisco failed to vote bonds to build their own distribution system or to buy out the Pacific Gas and Electric Company's lines in San Francisco. So San Francisco continues to sell the power wholesale to the Company and the Company retails it to the people of San Francisco, making a profit on the deal. Of course San Francisco has a revenue from the wholesaling to the Company. The San Francisco reservoirs are for household consumption rather than irrigation. Any revenue from incidental electrical energy would seem clear profit. But this wholesaling of electricity to the Company is contrary to the Raker Act. "So what?", the San Francisco officials might reply.

In 1925 Modesto decided that she might as well use San Francisco energy for standby service and at that time

1. Minutes of Board of Directors, X, 131

agreed to pay 4.7 mills per k.w.h.[1] This agreement was approved by the board reluctantly by a 3 to 2 vote.[2]

We have mentioned that Modesto had brought suit against San Francisco to force it to live up to the Raker Act.[3] On June 26, 1934 the board heard that San Francisco wanted to settle the suit out of court. Both District tentatively agreed to the same.[4] In December 1934 a committee was appointed to study a compromise agreement. This committee consisted of N. M. Cecil, Modesto Irrigation Engineer, C. E. Plummer, Modesto Electrical Engineer, R. V. Meikle, Turlock Chief Engineer, L. T. McAfee, San Francisco Chief Engineer and Manager, M. J. Bartell, San Francisco Hydraulic Engineer.[5]

The following agreement was approved by the Modesto and Turlock joint boards when it was reported February 20, 1940:

1. Sufficient water is available for both the Districts and San Francisco when properly conserved and if not more than 400,000,000 gallons are taken daily by San Francisco.

2. That full cooperation has resulted in the operation of storage releases from the reservoirs to best meet the requirements of both the Districts and San Francisco.

1. Minutes of Board of Directors, X, 301, 360-362
2. Ibid., p. 343
3. Supra, p. 129
4. Minutes of Board of Directors, XIV, 108
5. Ibid., XXI, 484-486

3. Agree to continue to operate as in the past with the same degree of cooperation.

4. Provisions of the Raker Act to be maintained.[1]

In deference to this agreement the board on June 12, 1940 adopted a resolution to postpone pending litigation against San Francisco.[2]

Now the Districts and San Francisco are at least temporarily good friends. An agreement was negotiated for a contract to purchase power from San Francisco from 1945 to 1954.[3] This agreement was extended to include Turlock in March 1945.[4] The District were forced to agree not to resell this power purchased from San Francisco to private companies.[5] This final agreement was signed by San Francisco on July 5 and by the Districts on July 6, 1945.[6]

1. Minutes of Board of Directors, XXI, 485
2. Ibid., XXII, 156
3. Ibid., XXVI, 347
4. Ibid., XXVII, 60
5. Ibid., p. 63
6. Ibid., pp. 87-93

Chapter VII

COMPETITION WITH THE PACIFIC GAS AND ELECTRIC COMPANY

Section 1

EARLY RELATIONS

Most of the last two chapters have, indirectly at least, been leading up to the story of the competition between the Modesto Irrigation District and the Pacific Gas and Electric Company. This controversy may be said to have started in 1912 when the Districts filed a protest with the Secretary of the Interior against changing the boundaries of Yosemite National Park to exclude reservoir sites from the Park. The proposed change would have made it possible for private power companies to get control of these sites.[1]

In the construction of Don Pedro Dam, the Districts again tangled with the Pacific Gas and Electric Company. The Company had certain water rights and rights of way for ditches. These ditches would be submerged by the Don Pedro Reservoir waters.[2] On January 10, 1921 the board ordered condemnation suits brought against the Company, and its subsidiary the Sierra and San Francisco Power Company.[3]

1. Supra, p. 93
2. Minutes of Board of Directors, VII, 400
3. Ibid., VIII, 36

As can well be imagined, the Company had no intentions of giving up without a fight. So a compromise agreement was negotiated and dated May 23, 1921. The "suit against... the Pacific Gas and Electric Company...for the purpose of condemning certain rights and properties... [was abandoned because] a compromise has been affected between the parties ...by the purchase of such lands and rights".[1]

This agreement called for the delivery of 10,000,000 k.w.h. a year to the Pacific Gas and Electric Company by the districts for a period of 25 years. Also water would have to be furnished to the gold dredger and the town of La Grange.[2] This was in exchange "for lands flooded, ditches destroyed and all rights on the Tuolumne River".[3]

On May 12, 1921 the joint boards approved a contract from the Pacific Gas and Electric Company to furnish electrical power for the construction of Don Pedro Dam.[4] In the Modesto District the Company on February 20, 1922, proposed a three year contract for power for five drainage pumps. Cancellation or modification of the agreement was provided for in case District power became available before that time.[5] A little later, April 25, 1922, the District invited the Company to propose a plan for the purchase of

1. Minutes of Board of Directors, VIII, 148
2. Ibid., p. 135
3. Ibid., p. 381
4. Ibid., p. 142
5. Ibid., p. 305

all energy from Don Pedro Dam.[1] It had been the original intention of both the Company and the District for the Company to retail the energy through its existing distribution system, but as noted above this was vetoed by the people.[2]

The proposal from the Company was submitted on May 2, 1922. This plan would have permitted the Company to buy most of the energy during peak seasons at from .002 to .004 per k.w.h.[3] The boards voted to refer the proposal to their electrical engineers to make a report to their respective boards.[4] The reports must not have been very favorable because both the Modesto and Turlock boards decided against wholesaling to the Company. Modesto even went further regarding the delivery of any power to the Company. On April 9, 1923 it resolved that because they were "imposed upon" and due to "misrepresentation" by the Company, they protest against delivering any power at any time to the Pacific Gas and Electric Company or to the San Francisco Power Company under the La Grange Contract of May 23, 1921.[5] However it was too late to do anything about the contract.

1. Minutes of Board of Directors, VIII, 329
2. Supra, p. 111
3. Minutes of Board of Directors, VIII, 333
4. Ibid., p. 335
5. Ibid., IX, 43, 44

Throughout this time the Company was furnishing electric energy to the District offices, the District pumps, Don Pedro Dam, and other District owned outlets. Following the decision to distribute their own power, the District closed out with the Company.[1] On January 14, 1924 a letter from the Company was read to the board saying, "enclosing the closing bill for light and power and thanking the District for past patronage".[2] This seems decent on the Company's part, because the competition between the two had already begun.[3]

Section 2

MODESTO ATTEMPTS TO ACQUIRE A MONOPOLY

It seemed very foolish to most observers for the Pacific Gas and Electric Company and the Modesto Irrigation District to have parallel lines throughout the area served by the two utilities. Of course the Company was there first. But the people had voted to distribute their own power.[4] It should have been clear to the Company that they could not compete against the people and still serve the people. But no progressive company wants to decrease its operating territory and the Pacific Gas and Electric Company was no exception.

1. Supra, p. 111
2. Minutes of Board of Directors, IX, 314
3. Supra, p. 114
4. Supra, p. 111

On January 15, 1923 director Lambert moved and director Sturgill seconded that the attorney take up the matter of the purchase of the electrical distribution system of the Pacific Gas and Electric Company (Sierra and San Francisco Power Company) located within the Modesto Irrigation District with a view to the purchase of the system by the District.[1] Two weeks later, January 31, 1923, this resolution was again considered. It was decided that the engineer should determine the amount of property to be bought and the price to be offered.[2] The subject was laid on the table for further consideration.

The attorney for the District had been instructed on January 25, 1923 to telegraph the Sierra and San Francisco Power Company and the Pacific Gas and Electric Company asking if they would sell their power system situated in the Modesto Irrigation District.[3] The Pacific Gas and Electric Company wrote that it was only the lessee of the distribution system in Modesto, but that it had personal information that the Sierra Power Company's policy was "not to dispose of any of its operating properties.[4]

The board decided to send a report on the above letter to the State Railroad Commission, the California Bond

1. Minutes of Board of Directors, VIII, 479
2. Ibid., p. 490
3. Ibid., p. 485
4. Ibid., IX, 144

Certification Commission, and the Sierra and San Francisco Power Company.[1]

The author has been informed by an employee of the Company who should have been acquainted with the facts, that the Company had been willing to sell out to the District, but that the District had offered such a small sum that the Company felt it could not afford to sell out. He also said that rather than to pay a just price for the properties, the District decided to freeze the Company out of business; that the Company had to fight back for self protection.

The foregoing may or may not be true. Certainly there was a more or less honest difference of opinion regarding the value of the properties involved. Also it is true that some people felt that it was a waste of money to buy out the Company when the Company's property might be condemned under the right of eminent domain.[2] The facts remain that the Company refused to sell to the District and the fight was on!

1. Minutes of Board of Directors, IX, 144
2. Ibid., XIII, 191

Section 3

THE BATTLE

This David versus Goliath battle was begun early in 1923 and ended, more than seventeen years later, in 1940. The contestants were not evenly matched in size, but the fight was close from the very beginning.

Modesto Irrigation District started off with a maximum generating power of 9,462 k.w.h.[1] A later addition of about 1000 k.w. was obtained by the purchase of the steam plant.[2] The money to back the District was not very great but, coming as it did from taxes, it was more or less dependable. Against this dinky generating capacity was arrayed the power empire of the Pacific Gas and Electric Company, its monopolies, its high powered attorneys.

An example of the relative power of the two contenders is indicated by the following: In 1924 "the Pacific Gas and Electric Company...stock is up to 163% of the 1919 value...against a fruit price decline of 46% in the same period.[3] Another example of the power of the Company is indicated by the following quotation from a prospectus of the Company:

1. Modesto Irrigation District, Annual Report of Secretary, (1938) p. 15
2. Supra, p. 120
3. Swett: "Irrigation and Agriculture", Commonwealth Club, XX, 350 (November, 1925)

> By the control, on the one hand, of the best and most economical water powers, and, on the other hand, of the markets for power...the business of the Company is beyond the reach of serious competition...The Company has such a strong grip on the situation...that it would be difficult for any competition to do it any injury.[1]

The directors of the District knew that "a monopoly of power existed".[2] They knew that any slip would cost the District heavily. But with the people behind them the directors felt confident.

Perhaps the Company hit a bit low first because the board was informed that the Company "had been soliciting signatures for contracts for electric service for longer or short periods".[3] The board therefore resolved that after November 1, 1923 entering into such obligations by citizens or concerns "would be detrimental to the Modesto Irrigation District and the taxpayers".[4]

Obviously the main battle was in the rates charged by the two antagonists. For the consumer this rate war was splendid. Even before the battle started the Company's rates were reasonably low. The District used the same rates at first and a copy of the lighting schedule follows:[5]

1. Lunt, "The Fight for Water in the West", Colliers, XLIV, 58 (Nov. 20, 1909)
2. Scientific American, XCIV, 457, (June 2, 1906)
3. Minutes of Board of Directors, IX, 265
4. Ibid.
5. Ibid., p. 264

			town	rural	
First	10	k.w.h.	1.00	1.25	minimum
11-	50	@	.06	.07	per k.w.h.
51 -	200		.05	.06	
201 -	1000		.04	.05	
1001 -	3000		.03	.04	
over	3000		.025	.035	

Although these lighting rates were the same as the Company's rates, it has been noted that the District's rates for pumping and electric heating were lower than the Company rates.[1]

The District started cutting rates in 1925. A committee had been appointed March 9 to study possibilities of a rate reduction. It found that in the first 16 months of operation, after deductions for a sinking fund for depreciation, maintenance, operation, and interest on bonds, the District showed a net profit of $64,235.46 which was 8.2% on the investment.[2] So the District felt justified in approving a rate reduction. The many reasons for reduction were previously noted.[3] Only incidental was the reason that a reduction would tempt consumers to come over to the District from the Company. The new schedule adopted on April 7, 1925 was as follows (again for lighting only):[4]

			town	rural	
First	10	k.w.h.	.90	1.10	minimum
11 -	50	@	.055	.06	per k.w.h.
51 -	150		.05	.05	
151 -	1000		.04	.04	
1001 -	3000		.03	.03	
over	3000		.025	.025	

1. Supra, p. 112
2. Minutes of Board of Directors, X, 68
3. Supra, p. 119
4. Minutes of Board of Directors, X, 79, 80

It did not seem to do much good to lower the rates because the following year a net profit of nearly 10% was shown.[1] History of electrical consumption has shown that whenever rates are lowered consumption of energy increases.

On January 30, 1928 B. W. Creim, electrical engineer, made another proposal for revision of electric rates. He proposed "to make reductions when justified" and in view of the fact that rates were "copies from the Power Company's schedules and that these schedules conflict with each other, are unintelligible to the general public and are discriminatory in some cases," he recommended that new schedules should be drawn up.[2] The rates adopted on April 8, 1928 are as indicated (for lighting only):[3]

	town		rural	
First 10 k.w.h.	.90		1.00	minimum
11 - 30 "	.045	11 - 50	.055	
31 - 150	.043	51 - 150	.05	
151 - 1000	.036		.04	
1001 - 3000	.029		.03	
3001 - 15000	.024	over 3000	.025	
over 15000	.02			

This latter schedule brought forth a new rate schedule from the Company. This was the schedule P-21 and it caused quite a rumpus. The District protested to the California Railroad Commission against this new rate schedule.[4] But the protest did no good at first.

1. Garrison, "Irrigation and Power", Union Pacific R. R., The Arrowhead Magazine, (1926) p. 12
2. Minutes of Board of Directors, XI, 199
3. Ibid., XI, 234
4. Ibid., XII, 92-104

The Company merely felt it was meeting and beating competition. Being a monopoly in some areas, the Company could maintain higher rates there while reducing rates in the Modesto District to undersell competition. Getting no satisfaction from the Company, the District again brought complaint to the Railroad Commission. The District protested the "discriminatory electric rate schedule".[1] In addition it asked the Commission to "cancel the Certificate of Necessity and Public Convenience".[2] The cancellation of this certificate by the Commission would have eliminated the Company from the area (that of course is what the directors wanted). The Railroad Commission, however, rejected this plea, and on November 9, 1931 handed down a decision upholding the Company's new rate schedule.

The Commission backed its decision as follows:

> To hold here under this record that there is an unlawful discrimination would involve not only a serious but unjustifiable departure from the long and unbroken trend of statutory, judicial and Commission precedent, both in this State and elsewhere which overwhelmingly sustains the right of a utility to meet in good faith a competitive rate without rendering itself subject to a charge of unlawful local discrimination. To hold otherwise would be to deny the right of a utility company to maintain its own existence by meeting the rates of its competitors.[3]

1. Minutes of Board of Directors, XII, 272
2. Ibid.
3. Modesto News Herald, Nov. 10, 1931, p. 2

On October 25, 1932 the District rates again were reduced and the farm surcharge was removed. Using the same example of lighting, the rates were as follows:[1]

First	10	k.w.h.	.90	minimum
11 -	30	@	.045	per k.w.h.
31 -	80		.025	
81 -	200		.02	
201 -	350		.015	
over	350		.013	

This sharp reduction reflects partly the influence of the Company's reduction and the influence of the Great Depression that forced the prices of almost everything down.

Effective March 1, 1933 further reductions were ordered by the board. These rates are represented by the lighting schedule (now called "Domestic") as follows:[2]

First	10	k.w.h.	.90	minimum
11 -	30	@	.045	per k.w.h.
31 -	80		.025	
81 -	200		.02	
over	200		.01	

At last the one cent kilowatt hour rate was attained.

Another reduction in rates was ordered as of December 31, 1935 as a sort of New Year's present:[3]

First	10	k.w.h.	.90	minimum
11 -	30	@	.045	per k.w.h.
31 -	80		.025	
81 -	180		.02	
over	180		.01	

This amounted to a flat 20 cents per month decrease on all households using more than 200 k.w.h. per month.

1. Minutes of Board of Directors, XIII, 167
2. Ibid., p. 226
3. Ibid., XV, 73

Slightly more than a year later another reduction was made. The February 1, 1937 schedule was as follows:[1]

First	5	k.w.h.	.50	minimum
6	- 10	@	.076	per k.w.h.
11	- 35		.038	
36	- 90		.024	
91	- 180		.02	
over	180		.01	

Still in the rate reduction mood the board gave another reduction as of April 1, 1938:[2]

First	5	k.w.h.	.50	minimum
6	- 10	@	.052	per k.w.h.
11	- 35		.036	
36	- 95		.024	
96	- 180		.02	
over	180		.01	

Since then two further reductions have been made in commercial light and power, on July 1, 1939 and November 1, 1940.[3] With the advent of World War II and the attendant increased costs, there have been no rate reductions. Besides, as will be seen later, the competition has now been eliminated.

It must not be believed that electrical revenue was sacrificed for these rate reductions. Nor were these reductions entirely political. The reductions were sensible and at times necessary, but the increased consumption took care of the drop in rates. The revenue for July, 1924 was:[4]

1. Minutes of Board of Directors, XV, 438D
2. Ibid., XVII, 201
3. Ibid., XX, 492; XXII, 389
4. Ibid., IX, 447

Modesto City	$ 10,766.55
Rural	4,861.60
Wholesale	11,070.95
	26,699.10

A year later due to the shortage of water the revenue was as follows:[1]

Modesto City	$ 14,202.15
Rural	7,190.91
Wholesale	1,897.15
	23,290.21

Note that both Modesto and rural consumption increased. The next year, July, 1926, the revenue was:[2]

Modesto City	$ 17,319.32
Rural	10,384.71
Wholesale	none available
	27,704.03

By March 1933 the gross revenues had reached $ 37,702.97 , and by April 1940 these figures had reached $ 65,846.37.[3] These figures are monthly incomes and were picked at random from the various District reports.

The rate reductions were made despite the fact that thousands of dollars of electrical revenues were transferred to the water department or to the bond redemption funds. No tricks were used to indicate profits that did not exist. Tax rates were reduced greatly during the same period of competition with the District.

1. Minutes of Board of Directors, X, 135
2. Ibid., XIII, 257
3. Ibid., XXII, 80

Rate cutting was only one of the aspects of the fight between the District and the Company. Another problem was raised over standby service and the wholesaling of electric energy. Originally it had been hoped that the Company would be willing to furnish standby service.[1] This was a vain hope when the District could not talk the Company into retiring from the District. During the first few years of operation the District had plenty of power even for wholesale, but beginning in 1929, and before the new generators were available at Don Pedro, the District was in desperate need of wholesale electricity to continue its war with the Pacific Gas and Electric Company.

It could not appeal to Turlock, because that District had agreed to wholesale its excess energy to the Company. Thus in a sense Turlock was giving aid and comfort to the enemy. Turlock had more than twice the electricity available from the Don Pedro Plant, but the Modesto District has about as large a consuming public. Turlock has excess power and Modesto is chronicly short.

So in 1929 the Company was asked to sell power wholesale to the District. The power was asked for "delivery at certain times of the year when it is anticipated the energy generated at Don Pedro will be insufficient to meet

1. Minutes of Board of Directors, VIII, 384

the needs of its electrical distribution system".[1] This the Company refused to do on the logical grounds that it would be selling to a competitor.[2] This would be helping their opponent to defeat the Company.

The District then requested the Railroad Commission to require either the Pacific Gas and Electric Company or the San Joaquin Light and Power Company (of Fresno) to furnish the additional electric energy.[3] April 1, 1929 the District requested additional power from the San Joaquin Light and Power Company.[4] This latter company was no competitor. This request was refused on April 24, 1929.[5] Apparently the private utilities were determined to stick together against the District.

So action was commenced against the San Joaquin Light and Power Company and the Pacific Gas and Electric Company before the California Railroad Commission.[6] The hearing date was set for June 26, 1929. However, before the date of the hearing the Fresno concern agreed to sell power to the Modesto District. This agreement was adopted June 25, 1929 (one day before the hearing was to be held).[7] The complaint to the Commission was then dropped by the District.

1. Modesto News Herald, April 30, 1929, p. 1
2. Minutes of Board of Directors, XI, 438
3. Ibid.
4. Ibid., p. 422
5. Ibid., p. 433
6. Ibid., p. 440
7. Ibid., pp. 468-472

The agreement must have been advantageous for both parties, for on July 26, 1937 the agreement was extended to March 12, 1944.[1]

Further sniping on both sides continued, however. The private utilities have long tried to get the state to tax the publicly-owned utilities in order to make the competition more nearly equal. Millions of dollars of taxes are levied on the private utilities that the publicly-owned do not have to pay. For instance throughout the period of competition between the District and the Company, the District regularly taxed the Company's buildings and other properties.

The state legislature in 1925 considered Senate Bill #7 and Assembly Bill #4 to tax publicly-owned utilities. (The low numbers indicate how successful the power lobbyists were in getting legislators to introduce these bills) The District urged that these bills be defeated.[2] They were. Undaunted, the private utilities again tried to tax the publicly-owned utilities. On January 6, 1930 the board again stated its opposition to the bills that were designed to tax the publicly-owned utilities.[3] The private utilities still have not given up hope of taxing these utilities and with the additional need for revenue due to World War II

1. Minutes of Board of Directors, XVI, 123
2. Ibid., X, 45
3. Ibid., XIII, 75

they may succeed in talking legislators into tapping this source of revenue.

The power companies were also tempting the national government to act in their favor. The District felt that it had to protest to the new Federal Power Commission (established under President Hoover) against the Commission "endeavoring to overturn the established water law [of California]...on behalf of a power company... [over the] vigorous protests by the officials" of California.[1]

To counteract the pressure propaganda of the power companies a book by C. D. Thompson, "Confessions of the Power Trust" was placed in the Modesto Public Library on December 27, 1932.[2] Further protection for the District was promoted by the proposed Garrison Revenue Bond Act which was approved by the Districts. This bill would have allowed the irrigation districts of California "to finance any needed extensions to our present publicly-owned water and power systems, or any new public utilities, by a lien only on the revenue from the project and not a mortgage on the homes or the farms of our people".[3] This Garrison law referendum was defeated by the people of the state, partly at least, through the propaganda against the act furnished by private interests.

1. Minutes of Board of Directors, XII, 474
2. Ibid., XIII, 199
3. Ibid., XVII, 163

It It should be noted that there was some friendly cooperation between the two rivals. For instance when the company brought in natural gas for fuel purposes in 1930 the District granted the Company the rights to cross District property. This was done graciously even though the introduction of the cheap natural gas for heating purposes cut down the consumption of power from the District. Direct cost of gas for cooking, heat, water heating is considerably less than the cost for electricity. Indirect costs are larger due to the necessity of cleaning and repainting rooms where gas is used for heating and cooking. August 31, 1931 permission was granted to the Company to cross the District lateral canal with a two inch gas main.[1] Other permits were granted, such as a 4-inch gas main across lateral number 4.[2]

Even in the electric field there was some cooperation between the two utility distributors, for instance when the Company requested permission to have four feet of cross arms on the power poles overhead on District property this request was granted.[3] On August 12, 1929 the District went even further by offering to give to the Company, free, a half interest in four new poles to replace old Company poles.[4] This offer of joint poles was accepted.

1. Minutes of Board of Directors, XII, 442
2. Ibid., XVI, 124
3. Ibid., X, 493
4. Ibid., XI, 490

From the beginning of the struggle, sensible men had felt that it was foolish for the two utilities to compete in the same area, with two sets of poles down each alley when one would have been sufficient. Other waste effort and expenses could be discovered, such as overlapping meter readers, collectors, trouble shooters, extra wires, etc. It was only a matter of time before an agreement of some sort would be reached to stop this waste of effort and material. So it happened that on December 12, 1932 a resolution was adopted unanimously, calling for the acquisition "by condemnation proceedings or otherwise" of the Company's electrical distribution system within the limits of the District.[1]

Section 4

THE PURCHASE

The board directed the attorneys to contact the Railroad Commission in regards to the purchase of the Company's local facilities. This application to determine just compensation was dated January 17, 1933. The Commission's order to the litigants to show cause was dated May 9, 1933 and a hearing in San Francisco was held August 29, 1933 by

1. Minutes of Board of Directors, III, 190, 191

the Commission in which the District and Company stated their cases.[1]

On April 17, 1934 a special finance committee of the board was appointed to study the method of financing the proposed purchase of the Company.[2]

On May 14, 1934 the Railroad Commission announced its decision for just compensation. Fixing this just compensation involved many factors. Should the value of the property be determined by its original cost, less depreciation, or by its present replacing cost? How much was the loss of good will or lessening of the Company's reputation worth? "On the question of reproduction cost new, less depreciation valuation, witnesses for the utility submitted a figure of $157,575, while the estimate of B. W. Creim, the District's electrical engineer, was $147,943".[3] These figures are amazingly close with only 6 or 7% variation. "As to the severance damage, the claims varied from an aggregate total figure of $206,147 claimed by the Company to $38,280 claimed by the District as the proper figure".[4] The Railroad Commission drew the line between these two claims and fixed $228,000 as the just compensation to be paid by the Modesto Irrigation District for the electrical distribution system

1. Minutes of Board of Directors, XIII, 271
2. Ibid., 445
3. The Modesto Bee, May 14, 1934, p. 1
4. Ibid.

of the Sierra and San Francisco Power Company, a subsidiary of the Pacific Gas and Electric Company, located and operated within the boundaries of the Irrigation District.[1]

On May 21, 1934 in response to the Railroad Commission's decision, the board offered to pay the Company the $222,000.[2] This was refused by the Company. The Company petitioned for a rehearing of the just compensation figure on June 1, but on June 14, 1934 this petition for rehearing was denied by the Railroad Commission.[3]

In 1924, instead of 1934, the Company might have considered selling out, if they had have been able to foresee the strength of the competition against them. But in the meantime the Company had brought natural gas into the District and was selling this to the citizens of the District. The Company obviously was in business to stay. It had two strings to its bow. And so the Company, as long as it felt that it was welcome with its natural gas (which assuredly it was), decided to remain.

The Company had entered the gas field in Modesto with the purchase of the Modesto Gas Company early in 1930. Natural gas was introduced in place of manufactured gas in the autumn of 1930.

1. The Modesto Bee, May 14, 1934, p. 1
2. Minutes of Board of Directors, XIII, 461
3. Ibid., p. 475

Constant pressure by the District and a growing realization by the Company that its electric system in the District was not making enough profit at the cut-throat rates adopted, forced the Company to reconsider the decision not to sell. Finally the Company, which still had the condemnation suit hanging over its head,[1] decided to sell out if a better price were given.

On June 10, 1940 the preliminary agreement for purchase was approved by the board. According to this agreement Modesto would withdraw the condemnation suit pending before the Superior Court of California and would pay $325,000 for the properties acquired.[2] The preliminary agreement would have to be approved by the California Districts Securities Commission and the Railroad Commission of the State of California.

The approval of the Railroad Commission and the Securities Commission was forthcoming, and on August 14, 1940 the board voted the official resolution purchasing the Pacific Gas and Electric Company's properties.[3] On the same day the down payment of $50,000 was made.[4] The Modesto Bee commented on the purchase as follows:

> The Railroad Commission's order stated the consolidation of service would relieve the Dis-

1. Supra, p. 144
2. Minutes of Board of Directors, XXII, 120-124
3. Ibid., 243
4. Ibid., p. 247

> trict and the Company of competitive expenses and also eliminate duplication of facilities. The District is paying $325,000 for the facilities. Under the contract $50,000 will be paid down, with $3,100 to be paid monthly. Interest also will be paid on the balance. By taking over the system the District will add about 1000 customers and will increase its income an estimated $69,000 annually.[1]

The Company agreed to wholesale power to the District when asked to do so.[2] The final payment on the Pacific Gas and Electric Company purchase were made in June, 1944. Thus ended the electrical competition between these utilities.

Section 5

THE FUTURE EXPECTATIONS

To close this study with the competion of the competition between the Pacific Gas and Electric Company and the Modesto Irrigation District would be unfair to the District.

The District currently is encouraging "Improvement Districts" that put concrete pipes and smaller concrete lined ditches throughout the District. These concrete pipes conserve water by preventing evaporation and seepage, thus helping the water table problem. The concrete ditches

1. The Modesto Bee, August 14, 1940, p. 1
2. According to the Annual Report of the secretary of the Modesto Irrigation District in the year just ended (1945) it was necessary to purchase wholesale energy from the Company every month of the year to meet the needs of the Modesto area. A total of $267,467.18 worth of energy was so purchased.

prevent seepage but evaporation remains a problem. Eventually the board hopes to line all main canals with concrete.

The present status of the District as shown by the annual report of the secretary of 1945 is very encouraging. The assessed valuation is $7,432,300. Bonds outstanding are $1, 695,900, a rate of 22.82% which is not excessive considering the financial strength of the District, electric energy sold exceeded $1,300,000 in 1945. Tax revenues amounted to about $111,000. There are 10 electric stations and more than 800 miles of transmission and distribution lines. The Water Department shows 161 miles of main canals and laterals, 700 miles of ditches, 77 drainage pumps. The area of the District is 81,203 acres. From this, 4,823 acres are subtracted for City, Towns, Canals, Roads, Railroads leaving 76,360 acres irrigable. The actual area irrigated was 70,759 acres.[1]

The Districts and San Francisco have determined to utilize fully, if possible, the entire watershed of the Tuolumne River. Other great storage dams are contemplated at strategic sites of the river. Another "Greater Don Pedro" dam is contemplated near the present Don Pedro Dam.[2] A Cherry Creek reservoir had been considered. Water rights

1. Modesto Irrigation District, Annual Report of the Secretary, 1945, passim
2. The Modesto Bee, May 8, 1946, p. 4

have been filed for in the Groveland area. This District is not static, it is progressive. As long as there is danger of a dry year, as long as the District has to buy wholesale electricity, more dams will be contemplated and built. Stick around and see.

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